

138-142 NORTH 10TH STREET

BROOKLYN, NEW YORK

Remedial Action Work Plan

NYC VCP Number: 15CVCP077K

E-Designation Site Number: 15EH-N348K

Prepared for:

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REMEDIAL ACTION WORK PLAN

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LIST OF ACRONYMS

Acronym	Definition
AOC	Area of Concern
BOA	Brownfield Opportunity Area
CAMP	Community Air Monitoring Plan
COC	Certificate of Completion
CSOP	Contractors Site Operation Plan
ECs/ICs	Engineering and Institutional Controls
HASP	Health and Safety Plan
VCA	Voluntary Cleanup Agreement
NOC	Notice of Completion
NYC VCP	New York City Voluntary Cleanup Program
NYC DEP	New York City Department of Environmental Protection
NYC DOHMH	New York State Department of Health and Mental Hygiene
NYCRR	New York Codes Rules and Regulations
NYC OER	New York City Office of Environmental Remediation
NYS DEC	New York State Department of Environmental Conservation
NYS DOH	New York State Department of Health
NYS DOT	New York State Department of Transportation
OSHA	United States Occupational Health and Safety Administration
PE	Professional Engineer
PID	Photo Ionization Detector
QEP	Qualified Environmental Professional
QHHEA	Qualitative Human Health Exposure Assessment
RAOs	Remedial Action Objectives
RAR	Remedial Action Report
RAWP	Remedial Action Work Plan or Plan
RCA	Recycled Concrete Aggregate
RD	Remedial Design
RI	Remedial Investigation
RMZ	Residual Management Zone
SCOs	Soil Cleanup Objectives
SCG	Standards, Criteria and Guidance
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SVOC	Semi-Volatile Organic Compound
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound

CERTIFICATION

I, Ariel Czemerinski, am a Professional Engineer licensed in the State of New York. I have primary direct responsibility for implementation of the remedial action for the Redevelopment Site located at Site 138-142 North 10th Street in located in Brooklyn, NY, Site number 15EH-N348K and NYC VCP number 15CVCP077K.

I certify that this Remedial Action Work Plan (RAWP) has a plan for handling, transport and disposal of soil, fill, fluids and other materials removed from the property in accordance with applicable City, State and Federal laws and regulations. Importation of all soil, fill and other material from off-Site will be in accordance with all applicable City, State and Federal laws and requirements. This RAWP has provisions to control nuisances during the remediation and all invasive work, including dust and odor suppression.

Name

NYS PE License Number

Signature

Date



EXECUTIVE SUMMARY

Bedford Acquisitions LLC has applied to enroll in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a 5,625-ft² Site located at 138-142 North 10th Street in the Williamsburg section of Brooklyn, New York. A remedial investigation (RI) was performed to compile and evaluate data and information necessary to develop this Remedial Action Work Plan (RAWP). The remedial action described in this document provides for the protection of public health and the environment consistent with the intended property use, complies with applicable environmental standards, criteria and guidance and conforms with applicable laws and regulations.

Site Location and Current Usage

The Site is located at 138-142 North 10th Street in the Williamsburg section of Brooklyn, New York, and is identified as Block 2304, Lots 12, 13 and 15 on the New York City Tax Map. Figure 1 shows the Site location. The lots are rectangular shaped and approximately 5,625 sf with approximately 54 feet of street frontage on North 10th Street. The Site is located on the south side of North 10th Street between Berry Street and Bedford Avenue and is bordered by North 10th Street to the north; and residential buildings to the east, south and west. A map of the site boundary is shown on Figure 2.

The Site is presently undeveloped and in use for storage of equipment and supplies associated with Apple Restoration and Waterproofing.

Summary of Proposed Redevelopment Plan

The proposed future use of the Site will consist of developing the lot with a new 6-story residential apartment building with a full cellar level. The cellar level will cover the north 80.5 ft of the lot, leaving a 19.5 ft of rear yard space. The building will have a full height basement level beneath the entire building footprint. Excavation for the cellar level will extend to a depth of approximately 12 feet below grade. The cellar level will consist of a mechanical area, as well as tenant's storage, elevator, stairwells, two recreation rooms, and two bathrooms. The first floor will consist of the residential lobby, two tenant one-car ventilated parking garages, and two residential apartments. Floors 2 through 6 will consist of residential apartments. The rear portion



of the site will be excavated from 6 to 12 ft for a courtyard area (stone pavers on gravel) and a raised landscaped area (exposed soil). An estimated 2,447 cubic yards (3,547 tons) of soil will require excavation for the new building's cellar and rear yard.

Layout of the redevelopment plans for the cellar and first floors are presented in Figure 3. The current zoning designation is R6A. The proposed use is consistent with existing zoning for the property.

The remedial action contemplated under this RAWP may be implemented independently of the proposed redevelopment plan.

Summary of Environmental Findings

1. The elevation of the Site is approximately 27 feet above mean sea level.
2. Depth to groundwater is estimated to be approximately 20 feet below sidewalk grade.
3. Groundwater flow is generally north.
4. Depth to bedrock at the Site is greater than 100 feet.
5. The stratigraphy of the Site from the surface down consists of historic fill material to depths as great as 4 feet, underlain by native brown sand with gravel.
6. Ten soil/fill samples were collected and their results were compared to NYSDEC Unrestricted Use Soil Cleanup Objectives and Restricted Residential Use Soil Cleanup Objectives as presented in 6NYCRR Part 375-6.8 and CP51. Soil/fill samples detected one VOC, acetone (190 µg/kg) in one shallow soil sample at concentration exceeding Unrestricted Use SCOs. Several other VOCs were detected at trace concentrations. Six SVOCs, including benz(a)anthracene (max. of 21,000 µg/kg), benzo(a)pyrene (max. of 17,000 µg/kg), benzo(b)fluoranthene (max. of 24,000 µg/kg), benzo(k)fluoranthene (7,600 µg/kg), chrysene (max. of 19,000 µg/kg), and indeno(1,2,3-cd)pyrene (6,100 µg/kg), were detected above Restricted Residential Use SCOs within all five of the shallow soil samples and two of the subsurface samples that extended to four feet deep. All SVOCs in deeper soils (12-14 feet bgs) were below Unrestricted Use SCOs. Pesticides 4'4'-DDD (max. 510 µg/kg), 4'4'-DDE (94 µg/kg), 4'4'-DDT (2,000 µg/kg)

and Dieldrin (180 µg/kg) were detected above Unrestricted Use SCOs in shallow soils. Several metals including barium (837 µg/kg), chromium (max. of 34.6 mg/kg), copper (max. of 71.7 mg/kg), lead (max. of 1,170 mg/kg), mercury (max. of 0.69 mg/kg), and zinc (max. of 480 mg/kg) exceeded Unrestricted Use SCOs within shallow soil samples. Of these metals, barium and lead also exceeded Restricted Residential Use SCOs. No metals exceeded Restricted Residential SCOs in deeper soil samples. Overall, the soil results were consistent with data identified at sites with urban fill material in NYC.

7. Three groundwater samples results were compared to New York State 6NYCRR Part 703.5 Class GA groundwater quality standards (GQS). Groundwater samples showed no PCBs or pesticides at detectable concentrations. Several VOCs were identified at trace concentrations and all were below their respective GQSs. Five SVOCs, including benz(a)anthracene (max. of 0.91 µg/L), benzo(b)fluoranthene (max. of 1.2 µg/L), benzo(k)fluoranthene (max. of 0.49 µg/L), and chrysene (0.9 µg/L) and indeno(1,2,3-cd)pyrene (max. of 0.43 µg/L) were detected above GQS in two groundwater samples. Several metals were identified, but iron (0.89 mg/L), manganese (max. of 4.77 mg/L) and sodium (max. of 81.1 mg/L) exceeded their respective GQS.
8. Soil vapor results collected during the RI were compared to the compounds listed in Vapor Intrusion Matrices in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion, dated October 2006. Total concentrations of petroleum-related VOCs (BTEX) ranged from 30.25 µg/m³ to 332.28 µg/m³. Most compounds were detected below 100 µg/m³ except for acetone at 261 µg/m³ and hexane at 2,700 µg/m³. The Chlorinated VOC, trichloroethylene (TCE) was detected in three of the soil gas samples, but at levels below the guidance value. Tetrachloroethylene was detected in all four soil gas samples ranging in concentration from 0.407 µg/m³ to 2.17 µg/m³. Carbon tetrachloride (maximum of 0.88 µg/m³) was detected in all four soil gas samples. 1,1,1-trichloroethane (maximum of 53.4 µg/m³) was detected in all four soil gas samples. The concentrations of all chlorinated compounds were below the monitoring level ranges established within the NYSDOH Final Guidance on Soil Vapor Intrusion.

Summary of the Remedy

The proposed remedial action achieves protection of public health and the environment for the intended use of the property. The proposed remedial action achieves all of the remedial action objectives established for the project and addresses applicable standards, criterion, and guidance; is effective in both the short-term and long-term and reduces mobility, toxicity and volume of contaminants; is cost effective and implementable; and uses standards methods that are well established in the industry.

The proposed remedial action will consist of:

1. Preparation of a Community Protection Statement and performance of all required NYC VCP Citizen Participation activities according to an approved Citizen Participation Plan.
2. Performance of a Community Air Monitoring Program for particulates and volatile organic carbon compounds.
3. Completion of a Waste Characterization Study prior to excavation activities. Waste characterization soil samples will be collected at a frequency dictated by disposal facility. A Waste Characterization Report documenting sample procedures, location, analytical results shall be submitted to NYCOER prior to start of remedial action.
4. Selection of NYSDEC 6NYCRR Part 375 Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs).
5. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
6. Excavation and removal of soil/fill exceeding Track 1 Restricted Residential Use. For development purposes, 4,480 sf of the Site will be excavated to depth of approximately 12 feet for the new building's cellar. The remaining portions will be excavated to a depth ranging from 6 to 12 ft and will feature stone pavers on gravel (in the area excavated to 12 ft bgs) and exposed soil (in the area excavated to 6 ft bgs). Approximately 3,547 tons of soil will be removed.
7. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID. Appropriate segregation of excavated media on-Site.

8. Management of excavated materials including temporarily stockpiling and segregating to prevent co-mingling of contaminated material and non-contaminated materials.
9. Removal of underground storage tanks (if encountered) and closure of petroleum spills (if evidence of a spill/leak is encountered during Site excavation) in compliance with applicable local, State and Federal laws and regulations.
10. Transportation and off-Site disposal of all soil/fill material at permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media on-Site.
11. Collection and analysis of four end-point samples to determine the performance of the remedy with respect to attainment of SCOs.
12. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
13. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.
14. Performance of all activities required for the remedial action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
15. Submission of a Remedial Action Report (RAR) that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, and describes all Engineering and Institutional Controls to be implemented at the Site, and lists any changes from this RAWP.

If Track 1 Unrestricted Use SCOs are not achieved, the following construction elements implemented as part of new development will constitute Engineering Controls:

16. As part of development, installation of a vapor barrier system below the concrete slab of the building as well as behind foundation walls of the proposed building. The vapor barrier will consist of the VaporBlock 20 Plus system as manufactured by Ravens Industries or equivalent system.
17. As part of development, construction and maintenance of an engineered composite cover consisting of the 8 inch thick concrete cellar slab to prevent human exposure to residual

soil/fill remaining under the Site.

18. Submission of an approved Site Management Plan (SMP) in the RAR for long-term management of residual contamination, including plans for operation, maintenance, monitoring, inspection and certification of Engineering and Institutional Controls and reporting at a specified frequency.
19. If Track 1 Unrestricted Use SCOs are not achieved, the property will continue to be registered with an E-Designation by the NYC Buildings Department. Establishment of Engineering Controls and Institutional Controls in this RAWP and a requirement that management of these controls must be in compliance with an approved SMP. Institutional Controls will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without OER-approval.

COMMUNITY PROTECTION STATEMENT

The Office of Environmental Remediation created the New York City Voluntary Cleanup Program (NYC VCP) to provide governmental oversight for the cleanup of contaminated property in NYC. This Remedial Action Work Plan (“cleanup plan”) describes the findings of prior environmental studies that show the location of contamination at the Site, and describes the plans to clean up the Site to protect public health and the environment.

This cleanup plan provides a very high level of protection for neighboring communities and also includes many other elements that address common community concerns, such as community air monitoring, odor, dust and noise controls, hours of operation, good housekeeping and cleanliness, truck management and routing, and opportunities for community participation. The purpose of this Community Protection Statement is to explain these community protection measures in non-technical language to simplify community review.

Remedial Investigation and Cleanup Plan. Under the NYC VCP, a thorough cleanup study of this property (called a remedial investigation) has been performed to identify past property usage, to sample and test soils, groundwater and soil vapor, and identify contaminant sources present on the property. The cleanup plan has been designed to address all contaminant sources that have been identified during the study of this property.

Identification of Sensitive Land Uses. Prior to selecting a cleanup, the neighborhood was evaluated to identify sensitive land uses nearby, such as schools, day care facilities, hospitals and residential areas. The cleanup program was then tailored to address the special conditions of this community.

Qualitative Human Health Exposure Assessment. An important part of the cleanup planning for the Site is the performance of a study to find all of the ways that people might come in contact with contaminants at the Site now or in the future. This study is called a Qualitative Human Health Exposure Assessment (QHHEA). A QHHEA was performed for this project. This assessment has considered all known contamination at the Site and evaluated the potential for people to come in contact with this contamination. All identified public exposures will be addressed under this cleanup plan.



Construction Health and Safety Plan. This cleanup plan includes a Construction Health and Safety Plan (CHASP) that is designed to protect community residents and on-Site workers. The elements of this plan are in compliance with safety requirements of the United States Occupational Safety and Health Administration (OSHA). This plan includes many protective elements including those discussed below.

Site Safety Coordinator. This project has a designated Site Safety Coordinator to implement the CHASP. The Site Safety Coordinator maintains an emergency contact sheet and protocol for management of emergencies. The Site Safety Coordinator is Mr. Kevin Waters of Environmental Business Consultants. Mr. Waters can be reached at (631) 504-6000.

Worker Training. Workers participating in cleanup of contaminated material on this project are required to be trained in a 40-hour hazardous waste operators training course and to take annual refresher training. This pertains only to workers performing specific tasks including removing hazardous material and installing cleanup systems in contaminated areas.

Community Air Monitoring Plan. Community air monitoring will be performed during this cleanup project to ensure that the community is properly protected from contaminants, dust and odors. Air samples will be tested in accordance with a detailed plan called the Community Air Monitoring Plan (CAMP). Results will be regularly reported to the NYC OER. This cleanup plan also has a plan to address any unforeseen problems that might occur during the cleanup (called a 'Contingency Plan').

Odor, Dust and Noise Control. This cleanup plan includes actions for odor and dust control. These actions are designed to prevent off-Site odor and dust nuisances and includes steps to be taken if nuisances are detected. Generally, dust is managed by application of physical covers and by water sprays. Odors are controlled by limiting the area of open excavations, physical covers, spray foams and by a series of other actions (called operational measures). The project is also required to comply with NYC noise control standards. If you observe problems in these areas, please contact the on-Site Project Manager, Mr. Kevin Waters at (631) 504-6000 or NYC Office of Environmental Remediation Project Manager, William Wong (212) 341-0659.

Quality Assurance. This cleanup plan requires that evidence be provided to illustrate that all cleanup work required under the plan has been completed properly. This evidence will be summarized in the final report, called the Remedial Action Report. This report will be submitted to the NYC Office of Environmental Remediation and will be thoroughly reviewed.

Storm-Water Management. To limit the potential for soil erosion and discharge, this cleanup plan has provisions for storm-water management. The main elements of the storm water management include physical barriers such as tarp covers and erosion fencing, and a program for frequent inspection.

Hours of Operation. The hours for operation of cleanup will comply with the NYC Department of Buildings construction code requirements or according to specific variances issued by that agency. For this cleanup project, the hours of operation are 7:00AM to 6:00PM Monday through Friday.

Signage. While the cleanup is in progress, a placard will be prominently posted at the main entrance of the property with a laminated project Fact Sheet that states that the project is in the NYC Voluntary Cleanup Program, provides project contact names and numbers, and locations of project documents can be viewed.

Complaint Management. The contractor performing this cleanup is required to address all complaints. If you have any complaints, you can call the facility Project Manager, Mr. Kimberly Somers (EBC) at (631) 504-6000, the NYC Office of Environmental Remediation Project Manager, William Wong at (212) 341-0659, or call 311 and mention the Site is in the NYC Voluntary Cleanup Program.

Utility Mark-outs. To promote safety during excavation in this cleanup, the contractor is required to first identify all utilities and must perform all excavation and construction work in compliance with NYC Department of Buildings regulations.

Soil and Liquid Disposal. All soil and liquid material removed from the Site as part of the cleanup will be transported and disposed of in accordance with all applicable City, State and Federal regulations and required permits will be obtained.

Soil Chemical Testing and Screening. All excavations will be supervised by a trained and properly qualified environmental professional. In addition to extensive sampling and chemical testing of soils on the Site, excavated soil will be screened continuously using hand-held instruments, by sight, and by smell to ensure proper material handling and management, and community protection.

Stockpile Management. Soil stockpiles will be kept covered with tarps to prevent dust, odors and erosion. Stockpiles will be frequently inspected. Damaged tarp covers will be promptly replaced. Stockpiles will be protected with silt fences. Hay bales will be used, as needed to protect storm water catch basins and other discharge points.

Trucks and Covers. Loaded trucks leaving the Site will be covered in compliance with applicable laws and regulations to prevent dust and odor. Trucks will be properly recorded in logs and records and placarded in compliance with applicable City, State and Federal laws, including those of the New York State Department of Transportation. If loads contain wet material that can leak, truck liners will be used. All transport of materials will be performed by licensed truckers and in compliance with all laws and regulations.

Imported Material. All fill materials proposed to be brought onto the Site will comply with rules outlined in this cleanup plan and will be inspected and approved by a qualified worker located on-Site. Waste materials will not be brought onto the Site. Trucks entering the Site with imported clean materials will be covered in compliance with applicable laws and regulations.

Equipment Decontamination. All equipment used for cleanup work will be inspected and washed, if needed, before it leaves the Site. Trucks will be cleaned at a truck inspection station on the property before leaving the Site.

Housekeeping. Locations where trucks enter or leave the Site will be inspected every day and cleaned regularly to ensure that they are free of dirt and other materials from the Site.

Truck Routing. Truck routes have been selected to: (a) limit transport through residential areas and past sensitive nearby properties; (b) maximize use of city-mapped truck routes; (c) limit total distance to major highways; (d) promote safety in entry to highways; (e) promote overall safety in trucking; and (f) minimize off-Site line-ups (queuing) of trucks entering the property. Operators of loaded trucks leaving the Site will be instructed not to stop or idle in the local neighborhood.

Final Report. The results of all cleanup work will be fully documented in a final report (called a Remedial Action Report) that will be available for you to review online at OER's website.

Long-Term Site Management. To provide long-term protection after the cleanup is complete, the property owner will be required to comply with an ongoing Site Management Plan that calls for continued inspection of protective controls, such as Site covers. The Site Management Plan is evaluated and approved by the NYC OER. Requirements that the property owner must comply with are established through a city environmental designation. A certification of continued protectiveness of the cleanup will be required from time to time to show that the approved cleanup is still effective.

REMEDIAL ACTION WORK PLAN

1.0 SITE BACKGROUND

Bedford Acquisitions LLC has applied to enroll in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 138-142 North 10th Street in the Williamsburg section of Brooklyn, New York (the Site). A Remedial Investigation (RI) was performed to compile and evaluate data and information necessary to develop this Remedial Action Work Plan (RAWP) in a manner that will render the Site protective of public health and the environment consistent with the contemplated end use. This RAWP establishes remedial action objectives, provides remedial alternatives analysis that includes consideration of a permanent cleanup, and provides a description of the selected remedial action. The remedial action described in this document provides for the protection of public health and the environment, complies with applicable environmental standards, criteria and guidance and applicable laws and regulations.

1.1 Site Location and Current Usage

The Site is located at 138-142 North 10th Street in the Williamsburg section of Brooklyn, New York, and is currently identified as Block 2304, Lots 12, 13 and 15 on the New York City Tax Map. Figure 1 shows the Site location. The lots are rectangular shaped and approximately 5,625 sf with approximately 54 feet of street frontage on North 10th Street. The Site is located on the south side of North 10th Street between Berry Street and Bedford Avenue and is bordered by North 10th Street to the north; and residential buildings to the east, south and west. A map of the site boundary is shown on Figure 2.

The Site is presently undeveloped and in use for storage of equipment and supplies associated with Apple Restoration and Waterproofing.

1.2 Proposed Redevelopment Plan

The proposed future use of the Site will consist of developing the lot with a new 6-story residential apartment building with a full cellar level.

The building will cover the north 80.5 ft of the lot and will have a full height basement level beneath the entire building footprint, leaving 19.5 ft of rear yard space (courtyard and raised landscaped area). Excavation for the cellar level will extend to a depth of approximately 12 feet below grade. The cellar level will consist of a mechanical area, as well as tenant's storage, elevator, stairwells, two recreation rooms, and two bathrooms. The first floor will consist of the residential lobby, two tenant one-car ventilated parking garages, and two residential apartments. Floors 2 through 6 will consist of residential apartments. The rear courtyard area will be excavated to 12 ft and will feature stone pavers on gravel. The rear 10 ft of the lot will be excavated to 6 ft and will feature natural landscaped area (exposed soil) with a retaining wall. An estimated 2,447 cubic yards (3,547 tons) of soil will require excavation for the new building's cellar and rear yard. The water table is expected at approximately 20 feet below grade surface (bgs), and will not be encountered during excavation.

Layout of the redevelopment plans for the cellar and first floor are presented in Figure 3. The current zoning designation is R6A. The proposed use is consistent with existing zoning for the property.

The remedial action contemplated under this RAWP may be implemented independently of the proposed redevelopment plan.

1.3 Description of Surrounding Property

The area immediately surrounding Site consists of a mix new and older residential and mixed-use buildings. Figure 4 shows the surrounding land usage of the adjacent properties listed below as well as additional properties located up to 500 feet away from the Site. No hospitals, schools or daycare facilities are located within a 250 ft radius of the Site.

Surrounding Property Usage

Direction	Property Description
North – Opposite side of N 10 th St.	<u>Block 2297, Lot 7502 – 125 North 10th Street</u> A 29,442 ft ² parcel developed with a 6-story mixed-use building.
South – Adjacent Properties	<u>Block 2304 Lots 34 and 35 – 137 through 139 North 9th Street</u> Two 2,500 ft ² wide lots each developed with a 3-story multi-family walk-up with rear yards behind each building.
East – Adjacent Property	<u>Block 2304, Lot 15 – 148 North 10th Street</u> A 7,500 ft ² lot developed with a 6-story residential building.
West – Adjacent Property	<u>Block 2304, Lot 10 – 136 North 10th Street</u> A 4,375 ft ² lot developed with a 2-story commercial/office building.

1.4 Remedial Investigation

A remedial investigation was performed and the results are documented in a companion document called “*Remedial Investigation Report, 138-142 North 10th Street, Brooklyn, NY*”, dated January 2015 (RIR).

Summary of Past Uses of Site and Areas of Concern

A Phase I Environmental Site Assessment was performed by an Environmental Professional from EBC on August 23, 2013. The Phase I Report noted no recognized environmental conditions in connection with the Site; however, the following environmental concerns were identified:

- The Site is listed with a Hazmat / Noise “E” restriction (E-138) with the descriptions of “underground gasoline storage tank testing protocol” and window wall attenuation and alternate ventilation”. Nearly any development scenario for the Site will be subject to the E-designation Environmental Review Program administered by the NYCOER.

The following Site history was established based on historic Sanborn maps:

The Site was originally developed in 1905 with three, three-story residential buildings until approximately 1982. The Site appears to have been comprised of three vacant lots for the years 1982 through 2007. Sanborn maps identify the Site as a parking area for trucks for the years

1983 through 1987. Sanborn maps dated 1988 through 2007 identify the Site as a vacant undeveloped lot in use for rag storage. No gasoline tanks were identified for the Site on the Sanborn maps.

Areas of Concern (AOCs) identified for the Site include:

1. The presence of historic fill material to depths as great as 4 feet; and
2. The Site was utilized as truck parking lot for the years 1983 through 1987.

Summary of the Work Performed under the Remedial Investigation

EBC performed the following scope of work at the Site in January of 2015:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Installed 5 soil borings across the Site, and collected 10 soil for chemical analysis from the soil borings to evaluate soil quality;
3. Installed 3 groundwater monitoring wells throughout the Site and collected 3 groundwater samples and one duplicate groundwater sample for chemical analysis to evaluate groundwater quality; and
4. Installed 4 sub-slab soil gas implants across the Site and collected 4 samples for chemical analysis.

Summary of Environmental Findings

1. The elevation of the Site is approximately 27 feet.
2. Depth to groundwater is estimated to be approximately 20 feet below sidewalk grade.
3. Regional groundwater flow is generally north.
4. Depth to bedrock at the Site is greater than 100 feet.
5. The stratigraphy of the Site from the surface down consists of historic fill material to depths as great as 4 feet, underlain by native brown sand with gravel.
6. Soil/fill samples results were compared to NYSDEC Unrestricted Use Soil Cleanup Objectives and Restricted Residential Soil Cleanup Objectives as presented in 6NYCRR Part 375-6.8 and CP51. Soil/fill samples detected one VOC, acetone (190 µg/kg) in one

shallow soil sample at concentration exceeding Unrestricted Use SCOs. Six SVOCs, including benz(a)anthracene (max. of 21,000 µg/kg), benzo(a)pyrene (max. of 17,000 µg/kg), benzo(b)fluoranthene (max. of 24,000 µg/kg), benzo(k)fluoranthene (7,600 µg/kg), chrysene (max. of 19,000 µg/kg), and indeno(1,2,3-cd)pyrene (6,100 µg/kg), were detected above Restricted Residential Use SCOs within shallow soil samples and two subsurface samples that extended to four feet deep. Pesticides 4'4'-DDD (max. 510 µg/kg), 4'4'-DDE (94 µg/kg), 4'4'-DDT (2,000 µg/kg) and Dieldrin (180 µg/kg) were detected above UUSCOs in shallow soils in two borings (B1 and B2). Several metals including barium (837 µg/kg), chromium (max. of 34.6 mg/kg), copper (max. of 71.7 mg/kg), lead (max. of 1,170 mg/kg), mercury (max. of 0.69 mg/kg), and zinc (max. of 480 mg/kg) exceeded Unrestricted Use SCOs within shallow soil samples. Of these metals, barium and lead also exceeded Restricted Residential Use SCOs. Overall, the soil results were consistent with data identified at sites with urban fill material in NYC.

7. Groundwater samples results were compared to the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (GQS) for Class GA (drinking water). Groundwater samples showed no PCBs or pesticides at detectable concentrations. Several VOCs were identified at trace concentrations and all were below their respective GQSs. Five SVOCs, including benz(a)anthracene (max. of 0.91 µg/L), benzo(b)fluoranthene (max. of 1.2 µg/L), benzo(k)fluoranthene (max. of 0.49 µg/L), and chrysene (0.9 µg/L) and indeno(1,2,3-cd)pyrene (max. of 0.43 µg/L) were detected above GQS in two groundwater samples. Several metals were identified, but iron (0.89 mg/L), manganese (max. of 4.77 mg/L) and sodium (max. of 81.1 mg/L) exceeded their respective GQS.
8. Soil vapor samples collected during the 2014 EBC RI were compared to the New York State Department of Health (NYSDOH) Final Guidance on Soil Vapor Intrusion (October 2006) Matrix 1 and Matrix 2 values. Total concentrations of petroleum-related VOCs (BTEX) ranged from 30.25 µg/m³ to 332.28 µg/m³. Most compounds were detected below 100 µg/m³ except for acetone at 261 µg/m³ and hexane at 2700 µg/m³. The CVOC trichloroethylene (TCE) was detected in three of the soil gas samples, but at levels below the guidance value. Tetrachloroethylene was detected in all four soil gas samples

ranging in concentration from 0.407 µg/m³ to 2.17 µg/m³. Carbon tetrachloride (maximum of 0.88 µg/m³) was detected in all four soil gas samples. 1,1,1-trichloroethane (maximum of 53.4 µg/m³) was detected in all four soil gas samples. The concentrations of all chlorinated compounds were below the monitoring level ranges established within the NYSDOH Final Guidance on Soil Vapor Intrusion.

For more detailed results, consult the RIR. Based on an evaluation of the data and information from the RIR and this RAWP, disposal of significant amounts of hazardous waste is not suspected at this site.

2.0 REMEDIAL ACTION OBJECTIVES

Based on the results of the RI, the following Remedial Action Objectives (RAOs) have been identified for this Site:

Groundwater

- Prevent direct exposure to contaminated groundwater.
- Prevent exposure to contaminants volatilizing from contaminated groundwater.

Soil

- Prevent direct contact with contaminated soil.
- Prevent migration of contaminants that would result in groundwater contamination.

Soil Vapor

- Prevent exposure to contaminants in soil vapor.
- Prevent migration of soil vapor into dwelling and other occupied structures.

3.0 REMEDIAL ALTERNATIVES ANALYSIS

The goal of the remedy selection process under is to select a remedy that is protective of human health and the environment taking into consideration the current, intended and reasonably anticipated future use of the property. The remedy selection process begins by establishing RAOs for media in which chemical constituents were found in exceedance of applicable standards, criteria and guidance values (SCGs). A remedy is then developed based on the following ten criteria:

- Protection of human health and the environment;
- Compliance with SCGs;
- Short-term effectiveness and impacts;
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, or volume of contaminated material;
- Implementability;
- Cost effectiveness;
- Community Acceptance;
- Land use; and
- Sustainability.

The following is a detailed description of the alternative analysis and remedy selection to address impacted media at the Site. As required, a minimum of two remedial alternatives (including a Track 1 Unrestricted Use scenario) are evaluated, as follows:

Alternative 1 involves:

- Selection of NYSDEC 6NYCRR Part 375 Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs).
- Removal of all soil/fill exceeding Track 1 Unrestricted Use SCOs throughout the Site and confirmation that Track 1 Unrestricted Use SCOs have been achieved with post-excavation endpoint sampling. If soil/fill containing analytes at concentrations above Track 1 Unrestricted Use SCOs is still present at the base of the excavation after removal

of all soil required for construction of the new building's cellar is complete, additional excavation will be performed to ensure complete removal of soil that does not meet Track 1 Unrestricted Use SCO;

- No Engineering or Institutional Controls are required for a Track 1 Unrestricted Use cleanup, but installation of a vapor barrier beneath the basement foundation and behind foundation sidewalls of the new building as a part of development to prevent any potential future exposures from off-Site soil vapor; and
- Placement of a final cover over the entire Site as part of new development.

Alternative 2 involves:

- Establishment of Site-Specific (Track 4) SCOs.
- Removal of all soil/fill exceeding Track 4 Site-Specific SCOs and confirmation that Track 4 Site-Specific SCOs have been achieved with post-excavation endpoint sampling. Excavation for construction of the new building's cellar level would take place to a depth of approximately 12 feet below grade across 90% of the Site. The remaining portion will be excavated to 6 feet below grade. If soil/fill containing analytes at concentrations above Track 4 Site-Specific SCOs is still present at the base of the excavation after removal of all soil required for construction of the new building's cellar and rear courtyard is complete, additional excavation will be performed to ensure complete removal of soil that does not meet Track 4 Site-Specific SCOs;
- Placement of a final cover over the entire Site to prevent exposure to remaining soil/fill;
- Installation of a soil vapor barrier system beneath the buildings slab, and along foundation side walls to prevent any potential future exposures from off-Site soil vapor;
- Establishment of use restrictions including prohibitions on the use of groundwater from the Site; prohibitions of sensitive Site uses, such as farming or vegetable gardening, to prevent future exposure pathways; and prohibition of a higher level of land use without OER approval;
- Establishment of an approved Site Management Plan (SMP) to ensure long-term management of these Engineering and Institutional Controls including the performance of

periodic inspections and certification that the controls are performing as they were intended; and

- Continued registration as an E-designated property to memorialize the remedial action and the Engineering and Institutional Controls required by the RAWP.

3.1 Threshold Criteria

Protection of Public Health and the Environment

This criterion is an evaluation of the remedy's ability to protect public health and the environment, and an assessment of how risks posed through each existing or potential pathway of exposure are eliminated, reduced or controlled through removal, treatment, and implementation of Engineering Controls or Institutional Controls. Protection of public health and the environment must be achieved for all approved remedial actions.

Alternative 1 would be protective of human health and the environment by removing contaminated soil/fill exceeding Track 1 Unrestricted Use SCOs and groundwater protection standards, thus eliminating potential for direct contact with contaminated soil/fill once construction is complete and eliminating the risk of contamination leaching into groundwater. The vapor barrier would prevent any soil vapors from entering the new building.

Alternative 2 would achieve comparable protections of human health and the environment by excavating the historic fill at the Site and by ensuring that remaining soil/fill on-Site meets Track 4 Site-Specific SCOs, as well as by placement of Institutional and Engineering Controls, including a composite cover system. The composite cover system would prevent direct contact with any remaining on-Site soil/fill. The vapor barrier would mitigate any vapor issues from entering the building. Implementing Institutional Controls including a Site Management Plan would ensure that the composite cover system remains intact and protective. Establishment of Track 4 Site-Specific SCOs would minimize the risk of contamination leaching into groundwater.

For both Alternatives, potential exposure to contaminated soils during construction would be minimized by implementing a Construction Health and Safety Plan (CHASP), an approved

Soil/Materials Management Plan and Community Air Monitoring Plan (CAMP). Potential contact with contaminated groundwater would be prevented as its use is prohibited by city laws and regulations. Potential future migration of off-Site soil vapors into the new building would be prevented by installing a vapor barrier system below the new building's cellar slab and continuing the vapor barrier around foundation walls.

3.2. Balancing Criteria

Compliance with Standards, Criteria and Guidance (SCGs)

This evaluation criterion assesses the ability of the alternative to achieve applicable standards, criteria and guidance.

Alternative 1 would achieve compliance with the remedial goals, chemical-specific SCGs and RAOs for soil through removal of soil to achieve Track 1 Unrestricted Use SCOs and Groundwater Protection Standards. Compliance with SCGs for soil vapor would also be achieved by installing a vapor barrier system below the new building's cellar slab and continuing the vapor barrier around foundation walls, as part of development.

Alternative 2 would achieve compliance with the remedial goals, chemical-specific SCGs and RAOs for soil through removal of soil to meet Track 4 Site-Specific SCOs. Compliance with SCGs for soil vapor would also be achieved by installing a vapor barrier system below the new building's cellar slab and continuing the vapor barrier around foundation walls. A Site Management Plan would ensure that these controls remained protective for the long term.

Health and safety measures contained in the CHASP and Community Air Monitoring Plan (CAMP) that comply with the applicable SCGs shall be implemented during Site redevelopment under this RAWP. For both Alternatives, focused attention on means and methods employed during the remedial action would ensure that handling and management of contaminated material would be in compliance with applicable SCGs. These measures will protect on-site workers and the surrounding community from exposure to Site-related contaminants.

Short-term effectiveness and impacts

This evaluation criterion assesses the effects of the alternative during the construction and implementation phase until remedial action objectives are met. Under this criterion, alternatives are evaluated with respect to their effects on public health and the environment during implementation of the remedial action, including protection of the community, environmental impacts, time until remedial response objectives are achieved, and protection of workers during remedial actions.

Both alternatives 1 and 2 have similar short-term effectiveness during their respective implementations, as each requires excavation of historic fill material. Both alternatives would result in short-term dust generation impacts associated with excavation, handling, load out of materials, and truck traffic. Short term impacts could potentially be higher for Alternative 1 if excavation of greater amounts of historical fill material is encountered below the excavation depth of the proposed building. However, focused attention to means and methods during the remedial action during a Track 1 removal action, including community air monitoring and appropriate truck routing, would minimize or negate the overall impact of these activities.

An additional short-term adverse impact and risks to the community associated with both remedial alternatives is increased truck traffic. Approximately 142, 25-ton capacity truck trips would be necessary to transport fill and soil excavated during Site development. Truck traffic will be routed on the most direct course using major thoroughfares where possible and flaggers will be used to protect pedestrians at Site entrances and exits.

The effects of these potential adverse impacts to the community, workers and the environment will be minimized through implementation of corresponding control plans including a Construction Health and Safety Plan, a Community Air Monitoring Plan (CAMP) and a Soil/Materials Management Plan (SMMP), during all on-Site soil disturbance activities and would minimize the release of contaminants into the environment. Both alternatives provide short term effectiveness in protecting the surrounding community by decreasing the risk of contact with on-Site contaminants. Construction workers operating under appropriate management procedures and a Construction Health and Safety Plan (CHASP) would be

protected from on-Site contaminants (personal protective equipment would be worn consistent with the documented risks within the respective work zones).

Long-term effectiveness and permanence

This evaluation criterion addresses the results of a remedial action in terms of its permanence and quantity/nature of waste or residual contamination remaining at the Site after response objectives have been met, such as permanence of the remedial alternative, magnitude of remaining contamination, adequacy of controls including the adequacy and suitability of ECs/ICs that may be used to manage contaminant residuals that remain at the Site and assessment of containment systems and ICs that are designed to eliminate exposures to contaminants, and long-term reliability of Engineering Controls.

Alternative 1 would achieve long-term effectiveness and permanence related to on-Site contamination by permanently removing all impacted soil/fill and enabling unrestricted usage of the property.

Alternative 2 would provide long-term effectiveness by removing most on-Site contamination and attaining Track 4 Site-Specific SCOs; establishing Engineering Controls including a composite cover system across the Site; establishing Institutional Controls to ensure long-term management including use restrictions, a Site Management Plan and maintaining continued registration as an E-designation property to memorialize these controls for the long term. The SMP would ensure long-term effectiveness of all ECs and ICs by requiring periodic inspection and certification that these controls and restrictions continue to be in place and are functioning as they were intended assuring that protections designed into the remedy will provide a continued high level of protection in perpetuity.

Both alternatives would result in removal of soil contamination exceeding the SCOs providing the highest level, most effective and permanent remedy over the long-term with respect to a remedy for contaminated soil, which would eliminate any migration to groundwater. Potential sources of soil vapor and groundwater contamination would also be eliminated as part of the remedy.

Reduction of toxicity, mobility, or volume of contaminated material

This evaluation criterion assesses the remedial alternative's use of remedial technologies that permanently and significantly reduce toxicity, mobility, or volume of contaminants as their principal element. The following is the hierarchy of source removal and control measures that are to be used to remediate a Site, ranked from most preferable to least preferable: removal and/or treatment, containment, elimination of exposure and treatment of source at the point of exposure. It is preferred to use treatment or removal to eliminate contaminants at a Site, reduce the total mass of toxic contaminants, cause irreversible reduction in contaminants mobility, or reduce of total volume of contaminated media.

Alternative 1 would permanently eliminate the toxicity, mobility, and volume of contaminants from on-Site soil by removing all soil in excess of Track 1 Unrestricted Use SCOs.

Alternative 2 would remove most, if not all, of the historic fill at the Site, and any remaining on-Site soil beneath the new building and rear courtyard will meet Track 4 - Site-Specific SCOs. Alternative 1 would eliminate a greater total mass of contaminants on-Site.

The removal of soil across 90% of the Site to approximately 12 feet for the new development in both scenarios would probably result in relatively minor differences between these two alternatives.

Implementability

This evaluation criterion addresses the technical and administrative feasibility of implementing an alternative and the availability of various services and materials required during its implementation, including technical feasibility of construction and operation, reliability of the selected technology, ease of undertaking remedial action, monitoring considerations, administrative feasibility (e.g. obtaining permits for remedial activities), and availability of services and materials.

The proposed remedial action is both feasible and implementable. The techniques, materials and equipment to implement Alternatives 1 and 2 are readily available and have been proven

effective in remediating the contaminants associated with the Site. They use standard materials and services that are well established technology. The reliability of each remedy is also high. There are no special difficulties associated with any of the activities proposed.

Cost effectiveness

This evaluation criterion addresses the cost of alternatives, including capital costs (such as construction costs, equipment costs, and disposal costs, engineering expenses) and site management costs (costs incurred after remedial construction is complete) necessary to ensure the continued effectiveness of a remedial action.

Since historic fill at the Site was only found during the RI to extend to a depth of up to 4 feet below grade, and the new building requires excavation of 90% of the Site to a depth of approximately 12 feet and to 6 feet in the rear courtyard, the costs associated with both Alternative 1 and Alternative 2 would likely be comparable. Additional long-term costs would be required for Alternative 2 based on implementation of a Site Management Plan as part of Alternative 2.

The remedial plan creates an approach that combines the remedial action with the redevelopment of the Site, including the construction of the building foundation and subgrade structures. The remedial plan is also cost effective in that it will take into consideration the selection of the closest and most appropriate disposal facilities to reduce transportation and disposal costs during the excavation of historic fill and other soils during the redevelopment of the Site.

Community Acceptance

This evaluation criterion addresses community opinion and support for the remedial action. Observations here will be supplemented by public comment received on the RAWP.

Based on the overall goals of the remedial program and initial permitting associated with the proposed site development, no adverse community opinion is anticipated for either alternative. This RAWP will be subject to a public review under the NYC VCP and will provide the opportunity for detailed public input on the remedial alternatives and the selected remedy. This

public comment will be considered by OER prior to approval of this plan. The Citizen Participation Plan for the project is provided in Attachment B.

Land use

This evaluation criterion addresses the proposed use of the property. This evaluation has considered reasonably anticipated future uses of the Site and takes into account: current use and historical and/or recent development patterns; applicable zoning laws and maps; NYS Department of State's Brownfield Opportunity Areas (BOA) pursuant to section 970-r of the general municipal law; applicable land use plans; proximity to real property currently used for residential use, and to commercial, industrial, agricultural, and/or recreational areas; environmental justice impacts, Federal or State land use designations; population growth patterns and projections; accessibility to existing infrastructure; proximity of the site to important cultural resources and natural resources, potential vulnerability of groundwater to contamination that might emanate from the site, proximity to flood plains, geography and geology; and current Institutional Controls applicable to the Site.

The proposed redevelopment of the Site is compatible with its current zoning and is consistent with recent development patterns. Following remediation, the Site will meet either Track 1 Unrestricted Use or Track 4 Site-Specific SCOs, both of which are appropriate for its planned residential use. Improvements in the current environmental condition of the property achieved by both alternatives are also consistent with the City's goals for cleanup of contaminated land and bringing such properties into productive reuse. Both alternatives are equally protective of natural resources and cultural resources.

Sustainability of the Remedial Action

This criterion evaluates the overall sustainability of the remedial action alternatives and the degree to which sustainable means are employed to implement the remedial action including those that take into consideration NYC's sustainability goals defined in *PlaNYC: A Greener, Greater New York*. Sustainability goals may include: maximizing the recycling and reuse of non-virgin materials; reducing the consumption of virgin and non-renewable resources; minimizing energy consumption and greenhouse gas emissions; improving energy efficiency; and promotion

of the use of native vegetation and enhancing biodiversity during landscaping associated with Site development.

The remedial plan would take into consideration the shortest trucking routes during off-Site disposal of historic fill and other soils, which would reduce greenhouse gas emissions and conserve energy used to fuel trucks. New York City Clean Soil Bank program may be utilized for reuse of import soils. To the extent practicable, energy efficient building materials, appliances, and equipment will be utilized to complete the development. While Alternative 2 would potentially result in lower energy usage based on reducing the volume of material transported off-Site, both remedial alternatives are comparable with respect to the opportunity to achieve sustainable remedial action. A complete list of green remedial activities considered as part of the NYC VCP is included in the Sustainability Statement, included as Appendix C.

4.0 REMEDIAL ACTION

4.1 Summary of Preferred Remedial Action

The preferred remedial action alternative is the Track 4 Alternative. The preferred remedial action alternative achieves protection of public health and the environment for the intended use of the property. The preferred remedial action alternative will achieve all of the remedial action objectives established for the project and addresses applicable SCGs. The preferred remedial action alternative is effective in both the short-term and long-term and reduces mobility, toxicity and volume of contaminants. The preferred remedial action alternative is cost effective and implementable and uses standards methods that are well established in the industry.

The proposed remedial action will consist of:

1. Preparation of a Community Protection Statement and performance of all required NYC VCP Citizen Participation activities according to an approved Citizen Participation Plan.
2. Performance of a Community Air Monitoring Program for particulates and volatile organic carbon compounds.
3. Completion of a Waste Characterization Study prior to excavation activities. Waste characterization soil samples will be collected at a frequency dictated by disposal facility. A Waste Characterization Report documenting sample procedures, location, analytical results shall be submitted to NYCOER prior to start of remedial action.
4. Selection of NYSDEC 6NYCRR Part 375 Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs).
5. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
6. Excavation and removal of soil/fill exceeding Track 1 Restricted Residential Use. For development purposes, 4,480 sf of the Site will be excavated to depth of approximately 12 feet for the new building's cellar. The remaining portions will be excavated to a depth ranging from 6 to 12 ft and will feature stone pavers on gravel (in the area excavated to 12 ft bgs) and exposed soil (in the area excavated to 6 ft bgs). Approximately 3,547 tons of soil will be removed.

7. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID. Appropriate segregation of excavated media on-Site.
8. Management of excavated materials including temporarily stockpiling and segregating to prevent co-mingling of contaminated material and non-contaminated materials.
9. Removal of underground storage tanks (if encountered) and closure of petroleum spills (if evidence of a spill/leak is encountered during Site excavation) in compliance with applicable local, State and Federal laws and regulations.
10. Transportation and off-Site disposal of all soil/fill material at permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media on-Site.
11. Collection and analysis of four end-point samples to determine the performance of the remedy with respect to attainment of SCOs.
12. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
13. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.
14. Performance of all activities required for the remedial action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
15. Submission of a Remedial Action Report (RAR) that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, and describes all Engineering and Institutional Controls to be implemented at the Site, and lists any changes from this RAWP.

If Track 1 Unrestricted Use SCOs are not achieved, the following construction elements implemented as part of new development will constitute Engineering Controls:

16. As part of development, installation of a vapor barrier system below the concrete slab of the building as well as behind foundation walls of the proposed building. The vapor barrier will consist of the VaporBlock 20 Plus system as manufactured by Ravens

Industries or equivalent system.

17. As part of development, construction and maintenance of an engineered composite cover consisting of the 8 inch thick concrete cellar slab to prevent human exposure to residual soil/fill remaining under the Site.
18. Submission of an approved Site Management Plan (SMP) in the RAR for long-term management of residual contamination, including plans for operation, maintenance, monitoring, inspection and certification of Engineering and Institutional Controls and reporting at a specified frequency.
19. If Track 1 Unrestricted Use SCOs are not achieved, the property will continue to be registered with an E-Designation by the NYC Buildings Department. Establishment of Engineering Controls and Institutional Controls in this RAWP and a requirement that management of these controls must be in compliance with an approved SMP. Institutional Controls will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without OER-approval.

4.2 Soil Cleanup Objectives and Soil/Fill Management

This Site already meets Track 2 restricted Residential Use SCOs. Track 1 Unrestricted Use Soil Cleanup Objectives (SCOs) are proposed for this project. The SCOs for this Site are listed in Table 1. If Track 1 Unrestricted Use SCOs are not achieved, the 6NYCRR Part 375, Table 6.8(b) Track 2 Restricted Residential SCOs will be used as amended by the following Site-Specific (Track 4) SCOs:

<u>Contaminant</u>	<u>Track 4 SCOs</u>
Total SVOCs	250 ppm
Mercury	1.5 ppm
Barium	800 ppm
Lead	1,000 ppm

Soil and materials management on-Site and off-Site, including excavation, handling and

disposal, will be conducted in accordance with the Soil/Materials Management Plan in Attachment D. The location of planned excavations is shown in Figure 5.

No over-excavation beyond the development cut is anticipated. If any hot-spot areas are identified during development and remediation at the Site, they will be removed to the extent practical.

Discrete contaminant sources (such as hotspots) identified during the remedial action will be identified by GPR or survey. This information will be provided in the Remedial Action Report.

Estimated Soil/Fill Removal Quantities

The total quantity of soil/fill expected to be excavated and disposed off-Site is 3,547 tons. Disposal location(s) will be reported promptly to the OER Project Manager prior to the start of the remedial action.

End-Point Sampling

Removal actions under this plan will be performed in conjunction with remedial end-point sampling. Confirmation end-point sampling and testing will be performed following materials removal and completed proper to Site development activities. To evaluate attainment of Track 4 Site-Specific SCOs, four confirmation end-point samples will be collected and analyzed for the trigger compounds (VOCs, SVOCs and metals) and elements established on the Track 4 Site-Specific SCOs list from within the building footprint. The approximate collection location of the confirmation end-point soil samples is shown on Figure 6.

In addition, if hotspots are encountered, hotspot removal end-point sampling frequency will consist of the following:

1. For excavations less than 20 feet in total perimeter, at least one bottom sample and one sidewall sample biased in the direction of surface runoff.
2. For excavations 20 to 300 feet in perimeter:
 - For surface removals, one sample from the top of each sidewall for every 30 linear

- feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area.
- For subsurface removals, one sample from each sidewall for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area.
3. For sampling of volatile organics, bottom samples should be taken within 24 hours of excavation, and should be taken from the zero to six-inch interval at the excavation floor. Samples taken after 24 hours should be taken at six to twelve inches.
 4. For contaminated soil removal, post remediation soil samples for laboratory analysis should be taken immediately after contaminated soil removal. If the excavation is enlarged horizontally, additional soil samples will be taken pursuant to bullets 1-3 above.

Post-remediation sample locations and depth will be biased towards the areas and depths of highest contamination identified during previous sampling episodes unless field indicators such as field instrument measurements or visual contamination identified during the remedial action indicate that other locations and depths may be more heavily contaminated. In all cases, post-remediation samples should be biased toward locations and depths of the highest expected contamination.

New York State ELAP certified labs will be used for all end-point sample analyses. Labs for end-point sample analyses will be reported in the RAR. The RAR will provide a tabular and map summary of all end-point sample results and will include all data including non-detects and applicable standards and/or guidance values. End-point samples will be analyzed for trigger analytes (those for which SCO exceedence is identified) utilizing the following methodology:

Soil analytical methods will include:

- Volatile organic compounds by EPA Method 8260;
- Semi-volatile organic compounds by EPA Method 8270;
- Target Analyte List metals; and
- Pesticides/PCBs by EPA Method 8081/8082.

If either LNAPL and/or DNAPL are detected, appropriate samples will be collected for characterization and required regulatory reporting (i.e. spills hotline) will be performed.

Quality Assurance/Quality Control

The fundamental QA objective with respect to accuracy, precision, and sensitivity of analysis for laboratory analytical data is to achieve the QC acceptance of the analytical protocol. The accuracy, precision and completeness requirements will be addressed by the laboratory for all data generated.

One duplicate sample for every 20 samples collected will be submitted to the approved laboratory for analysis of the same parameters. One trip blank will be submitted to the laboratory with each shipment of soil samples.

Collected samples will be appropriately packaged, placed in coolers and shipped via overnight courier or delivered directly to the analytical laboratory by field personnel. Samples will be containerized in appropriate laboratory provided glassware and shipped in plastic coolers. Samples will be preserved through the use of ice or “cold-paks” to maintain a temperature of 4°C.

Dedicated disposable sampling materials will be used for the collection endpoint samples, eliminating the need to prepare field equipment (rinsate) blanks. However, if non-disposable equipment is used, (stainless steel scoop, etc.) field rinsate blanks will be prepared at the rate of 1 for every eight samples collected. Decontamination of non-dedicated sampling equipment will consist of the following:

- Gently tap or scrape to remove adhered soil
- Rinse with tap water
- Wash withalconox® detergent solution and scrub
- Rinse with tap water
- Rinse with distilled or deionized water

Prepare field blanks by pouring distilled or deionized water over decontaminated equipment and collecting the water in laboratory provided containers. Trip blanks will be used whenever samples are transported to the laboratory for analysis of VOCs. Trip blanks will not be used for samples to be analyzed for metals, SVOCs or pesticides. One blind duplicate sample will be prepared and submitted for analysis every 20 samples.

Import and Reuse of Soils

Import of soils onto the property and reuse of soils already on-Site will be performed in conformance with the Soil/Materials Management Plan in Attachment D. The estimated quantity of soil to be imported into the Site for backfill and cover soil is 0 tons. The estimated quantity of on-Site soil/fill expected to be reused/relocated on Site is 62 tons.

4.3 Engineering Controls

The excavation required for the proposed Site development will achieve Track 4 Site Specific SCOs. Engineering Controls are required in the remedial action to address residual contamination remaining at the Site. The Site has three primary Engineering Control Systems: composite cover system, sub-slab depressurization system and vapor barrier system.

Composite Cover System

Exposure to residual soil/fill will be prevented by an engineered, composite cover system to be built on the Site. This composite cover system is comprised of the 8 inch thick concrete cellar slab.

The composite cover system would serve as a permanent engineering control for the Site. The system will be inspected and reported at specified intervals as required by this RAWP and the SMP. A Soil Management Plan will be included in the Site Management Plan and will outline the procedures to be followed in the event that the composite cover system and underlying residual soil/fill is disturbed after the remedial action is complete. Maintenance of this composite cover system will be described in the Site Management Plan in the RAR. Figure 5 shows the location of the composite cover system.

Vapor Barrier

Migration of potential soil vapor from on-Site or off-Site in the future will be mitigated with a vapor barrier. The vapor barrier will consist of Raven Industries' VaporBlock 20 Plus, which is a seven layer co-extruded barrier made from state-of-the-art polyethylene and EVOH resins. The vapor barrier will be installed prior to pouring the building's concrete slab. The vapor barrier will extend throughout the area occupied by the footprint of the new buildings and up the foundation sidewalls in accordance with manufacturer specifications. The specifications for installation will be provided to the construction management company and the foundation contractor or installer of the liner. The specifications state that all vapor barrier seam, penetrations, and repairs will be sealed either by the tape method or weld method, according to the manufacturer's recommendations and instructions.

The project's Professional Engineer licensed by the State of New York will have primary direct responsibility for overseeing the implementation of the vapor barrier. The extent of the proposed vapor barrier membrane is provided in Figure 7. Product specification sheets are provided in Attachment F.

The Remedial Action Report will include photographs (maximum of two photos per page) of the installation process, PE/RA certified letter (on company letterhead) from primary contractor responsible for installation oversight and field inspections, and a copy of the manufacturer's certificate of warranty.

4.4 Institutional Controls

Institutional Controls (IC) have been incorporated in this remedial action to manage residual soil/fill and other media and render the Site protective of public health and the environment. Institutional Controls are listed below. Long-term employment of EC/ICs will be established in a site-specific Site Management Plan (SMP) that will be included in the RAR.

Institutional Controls for this remedial action are:

- The property will continue to be registered with an E-Designation at the NYC Buildings Department. This RAWP includes a description of all ECs and ICs and summarizes the requirements of the Site Management Plan which will note that the property owner and property owner's successors and assigns must comply with the approved SMP;
- Submittal of a Site Management Plan in the RAR for approval by OER that provides procedures for appropriate operation, maintenance, monitoring, inspection, reporting and certification of ECs. SMP will require that the property owner and property owner's successors and assigns will submit to OER a periodic written statement that certifies that: (1) controls employed at the Site are unchanged from the previous certification or that any changes to the controls were approved by OER; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. OER retains the right to enter the Site in order to evaluate the continued maintenance of any controls. This certification shall be submitted annually and will comply with RCNY §43-1407(1)(3);
- Vegetable gardens and farming on the Site are prohibited;
- Use of groundwater underlying the Site is prohibited without treatment rendering it safe for its intended use;
- All future activities on the Site that will disturb residual material must be conducted pursuant to the soil management provisions in an approved SMP; and
- The Site will be used for residential use and will not be used for a higher level of use without prior approval by OER.

4.5 Site Management Plan

Site Management is the last phase of remediation and begins with the approval of the Remedial Action Report and issuance of the Notice of Completion (NOC) for the Remedial Action. The Site Management Plan (SMP) describes appropriate methods and procedures to ensure implementation of all ECs and ICs that are required by this RAWP. The Site Management Plan is submitted as part of the RAR but will be written in a manner that allows its use as an independent document. Site Management continues until terminated in writing by OER. The property owner is responsible to ensure that all Site Management responsibilities defined in this

RAWP and the Site Management Plan are implemented.

The SMP will provide a detailed description of the procedures required to manage residual soil/fill left in place following completion of the remedial action in accordance with the Voluntary Cleanup Agreement with OER. This includes a plan for: (1) implementation of EC's and ICs; (2) implementation of monitoring programs; (3) operation and maintenance of EC's; (4) inspection and certification of EC's; and (5) reporting.

Site management activities, reporting, and EC/IC certification will be scheduled on a periodic basis to be established in the SMP and will be subject to review and modification by OER. The Site Management Plan will be based on a calendar year and certification reports will be due for submission to OER by July 30 of the year following the reporting period.

4.6 Qualitative Human Health Exposure Assessment

Investigations reported in the Remedial Investigation Report (RIR) are sufficient to complete a Qualitative Human Health Exposure Assessment (QHHEA).

The objective of the qualitative exposure assessment is to identify potential receptors to the contaminants of concern (COC) that are present at, or migrating from, the Site. The identification of exposure pathways describes the route that the COC takes to travel from the source to the receptor. An identified pathway indicates that the potential for exposure exists; it does not imply that exposures actually occur.

Investigations reported in the Remedial Investigation Report (RIR) are sufficient to complete a Qualitative Human Health Exposure Assessment (QHHEA). As part of the VCP process, a QHHEA was performed to determine whether the Site poses an existing or future health hazard to the Site's exposed or potentially exposed population. The sampling data from the RI were evaluated to determine whether there is any health risk by characterizing the exposure setting, identifying exposure pathways, and evaluating contaminant fate and transport. This EA was prepared in accordance with Appendix 3B and Section 3.3 (b) 8 of the NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation.

Known and Potential Sources

Based on the results of the Remedial Investigation Report the contaminants of concern found are:

Soil

- SVOCs, including benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene exceeded Restricted Residential Use SCOs in shallow soils that extended to approximately four feet deep.
- Pesticides including 4,4'-DDD, 4,4'-DDE, 4,4'-DDT and dieldrin were detected, but did not exceed Restricted Residential Use SCOs in shallow soils.
- Metals including barium and lead exceeded Restricted Residential Use SCOs.

Groundwater

- SVOCs, including benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, and chrysene and indeno(1,2,3-cd)pyrene exceed GQS.
- Metals, including iron, manganese, and sodium were detected above GQS in the filtered groundwater samples.

Soil Vapor

- VOC compounds were detected below 100 $\mu\text{g}/\text{m}^3$ with the exceptions of acetone and hexane.
- The concentrations of all chlorinated compounds were below the monitoring level ranges established within the NYSDOH Final Guidance on Soil Vapor Intrusion.

Nature, Extent, Fate and Transport of Contaminants

SVOCs, metals, and pesticides are present in the historic fill materials to depths of 4 feet below grade. No SVOCs or pesticides were detected within any of the soil samples collected from the native soil layer below the historic fill material layer. SVOC and metal exceedances found in soil were not detected in the groundwater samples above their respective GQSs. No chlorinated

VOCs were detected in on-Site soil above Unrestricted Use SCOs, and no chlorinated VOCs were detected above GQS in groundwater.

Potential Routes of Exposure

The five elements of an exposure pathway are: (1) a contaminant source; (2) contaminant release and transport mechanisms; (3) a point of exposure; (4) a route of exposure; and (5) a receptor population. An exposure pathway is considered complete when all five elements of an exposure pathway are documented. A potential exposure pathway exists when any one or more of the five elements comprising an exposure pathway cannot be documented. An exposure pathway may be eliminated from further evaluation when any one of the five elements comprising an exposure pathway has not existed in the past, does not exist in the present, and will never exist in the future. Three potential primary routes exist by which chemicals can enter the body:

- Ingestion of fill/soil;
- Inhalation of vapors and particulates; and
- Dermal contact with water, fill, soil, or building materials.

Existence of Human Health Exposure

Current Conditions: A potential for exposure to surficial historic fill exists under current conditions but is limited due to the perimeter fence preventing access into the site. The Site is served by public water supply and groundwater use for potable supply is prohibited, groundwater is not used at the Site and there is no potential for exposure. Due to the lack of structures on-site, the potential for accumulation of soil vapor does not exist.

Construction/Remediation Activities: Once redevelopment activities begin, construction workers will come into direct contact with surface and subsurface soils, as a result of on-Site construction and excavation activities. On-Site construction workers potentially could ingest, inhale, or have dermal contact with any exposed impacted soil, and fill. Similarly, off-Site receptors could be exposed to dust and vapors from on-Site activities. During remedial action, on-Site and off-Site exposures to contaminated dust from on-Site will be addressed through the implementation of the Soil/Materials Management Plan, stormwater pollution prevention, dust controls, and through

the implementation of the Community Air-Monitoring Program and a Construction Health and Safety Plan.

Proposed Future Conditions: Under future remediated conditions, all soils in excess of Track 4 Site-Specific SCOs will be removed. The Site will be fully capped, limiting potential direct exposure to soil and groundwater remaining in place, and a vapor barrier system will prevent any exposure to potential off-Site soil vapors in the future. The Site is served by a public water supply, and groundwater is not used at the Site for potable supply. There are no plausible off-site pathways for ingestion, inhalation, or dermal exposure to contaminants derived from the Site under future conditions.

Receptor Populations

On-Site Receptors - The Site is currently developed with a six-story residential building with a rear yard. The property is currently vacant and undeveloped. During redevelopment of the Site, the on-Site potential receptors will include construction workers, site representatives, and visitors. Once the Site is redeveloped, the on-Site potential sensitive receptors will include adult and child building residents and visitors.

Off-Site Receptors - Potential off-Site receptors within a 0.25-mile radius of the Site include: adult and child residents, and commercial and construction workers, pedestrians, trespassers, and cyclists, based on the following:

1. Commercial Businesses (up to 0.25 mile) - existing and future
2. Residential Buildings (up to 0.25 mile) - existing and future
3. Building Construction/Renovation (up to 0.25 mile) - existing and future
4. pedestrians, Trespassers, Cyclists (up to 0.25 mile) - existing and future
5. Schools (up to 0.25 mile) - existing and future

Overall Human Health Exposure Assessment

There are potential complete exposure pathways for the current Site condition. There is a potential complete, exposure pathway that requires mitigation during implementation of the remedy. Under current conditions, on-Site exposure pathways exist for Site personnel and

trespassers. During remedial construction, on-Site and off-Site exposures to contaminated dust from historic fill material will be addressed through dust controls, and through the implementation of the Community Air Monitoring Program, the Soil/Materials Management Plan, and a Construction Health and Safety Plan. There is no complete exposure pathway under future conditions after the Site is developed. After the remedial action is complete, there will be no remaining exposure pathways to on-Site soil/fill, as all soil above Track 4 Site Specific SCOs will have been removed and a vapor barrier system will have been installed as part of development. The vapor barrier system will prevent potential vapor intrusion. The composite cover system and use restrictions will prevent contact with residual soil or groundwater and continued protection after the remedial action will be achieved by the implementation of site management including periodic inspection and certification of the performance of remedial controls. Potential post-construction use of groundwater is not considered an option because groundwater in this area of New York City is not used as a potable water source. There are no surface waters in close proximity to the Site that could be impacted or threatened. This assessment takes into consideration the reasonably anticipated use of the Site, which includes a residential structure, site-wide impervious surface cover cap, and a vapor barrier for the building.

5.0 REMEDIAL ACTION MANAGEMENT

5.1 Project Organization and Oversight

Principal personnel who will participate in the remedial action include Kimberly Somers, Project Manager-EBC and Kevin Waters, Field Operations Officer-EBC. The Professional Engineer (PE) and Qualified Environmental Professionals (QEP) for this project are Ariel Czemerinski P.E., AMC Engineering and Charles Sosik P.G. EBC.

5.2 Site Security

Site access will be controlled by a chain link or wooden construction fence, which will surround the property.

5.3 Work Hours

The hours for operation of remedial construction will be from 7:00AM to 6:00PM. These hours conform to the New York City Department of Buildings construction code requirements.

5.4 Construction Health and Safety Plan

The Health and Safety Plan is included in Appendix E. The Site Safety Coordinator will be Kevin Waters - EBC. Remedial work performed under this RAWP will be in full compliance with applicable health and safety laws and regulations, including Site and OSHA worker safety requirements and HAZWOPER requirements. Confined space entry, if any, will comply with OSHA requirements and industry standards and will address potential risks. The parties performing the remedial construction work will ensure that performance of work is in compliance with the HASP and applicable laws and regulations. The HASP pertains to remedial and invasive work performed at the Site until the issuance of the Notice of Completion.

All field personnel involved in remedial activities will participate in training required under 29 CFR 1910.120, including 40-hour hazardous waste operator training and annual 8-hour refresher training. Site Safety Officer will be responsible for maintaining workers training records.

Personnel entering any exclusion zone will be trained in the provisions of the HASP and be

required to sign an HASP acknowledgment. Site-specific training will be provided to field personnel. Additional safety training may be added depending on the tasks performed. Emergency telephone numbers will be posted at the site location before any remedial work begins. A safety meeting will be conducted before each shift begins. Topics to be discussed include task hazards and protective measures (physical, chemical, environmental); emergency procedures; PPE levels and other relevant safety topics. Meetings will be documented in a log book or specific form.

An emergency contact sheet with names and phone numbers is included in the HASP. That document will define the specific project contacts for use in case of emergency.

5.5 Community Air Monitoring Plan

Real-time air monitoring for volatile organic compounds (VOCs) and particulate levels at the perimeter of the exclusion zone or work area will be performed. Continuous monitoring will be performed for all ground intrusive activities and during the handling of contaminated or potentially contaminated media. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pit excavation or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be performed during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. Periodic monitoring during sample collection, for instance, will consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. Depending upon the proximity of potentially exposed individuals, continuous monitoring may be performed during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence. Exceedances of action levels observed during performance of the Community Air Monitoring Plan (CAMP) will be reported to the OER Project Manager and included in the Daily Report.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis during invasive work. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shutdown.

All 15-minute readings must be recorded and be available for OER personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work will continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed $150 \text{ mcg}/\text{m}^3$ above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than $150 \text{ mcg}/\text{m}^3$ above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work will resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within $150 \text{ mcg}/\text{m}^3$ of the upwind level and in preventing visible dust migration.

All readings will be recorded and be available for OER personnel to review.

5.6 Agency Approvals

All permits or government approvals required for remedial construction have been or will be obtained prior to the start of remedial construction. Approval of this RAWP by OER does not constitute satisfaction of these requirements and will not be a substitute for any required permit.

5.7 Site Preparation

Pre-Construction Meeting

OER will be invited to attend the pre-construction meeting at the Site with all parties involved in the remedial process prior to the start of remedial construction activities.

Mobilization

Mobilization will be conducted as necessary for each phase of work at the Site. Mobilization includes field personnel orientation, equipment mobilization (including securing all sampling equipment needed for the field investigation), marking/staking sampling locations and utility mark-outs. Each field team member will attend an orientation meeting to become familiar with the general operation of the Site, health and safety requirements, and field procedures.

Utility Marker Layouts, Easement Layouts

The presence of utilities and easements on the Site will be fully investigated prior to the performance of invasive work such as excavation or drilling under this plan by using, at a minimum, the One-Call System (811). Underground utilities may pose an electrocution, explosion, or other hazard during excavation or drilling activities. All invasive activities will be performed in compliance with applicable laws and regulations to assure safety. Utility companies and other responsible authorities will be contacted to locate and mark the locations, and a copy of the Markout Ticket will be retained by the contractor prior to the start of drilling, excavation or other invasive subsurface operations. Overhead utilities may also be present within the anticipated work zones. Electrical hazards associated with drilling in the vicinity of overhead utilities will be prevented by maintaining a safe distance between overhead power lines and drill rig masts.

Proper safety and protective measures pertaining to utilities and easements, and compliance with all laws and regulations will be employed during invasive and other work contemplated under this RAWP. The integrity and safety of on-Site and off-Site structures will be maintained during all invasive, excavation or other remedial activity performed under the RAWP.

Dewatering

Groundwater is present at approximately 20 feet below grade and excavation to a depth of approximately 12 feet is anticipated; therefore, dewatering of groundwater during construction will not be necessary.

Equipment and Material Staging

Equipment and materials will be stored and staged in a manner that complies with applicable laws and regulations. Staging locations will be reported to OER prior to the start of the remedial action.

Stabilized Construction Entrance

Steps will be taken to ensure that trucks departing the Site will not track soil, fill or debris off-Site. Such actions may include use of cleaned asphalt or concrete roads or use of stone or other aggregate-based egress paths between the truck inspection station and the property exit. Measures will be taken to ensure that adjacent roadways will be kept clean of project related soils, fill and debris.

Truck Inspection Station

An outbound-truck inspection station will be set up close to the Site exit. Before exiting the NYC VCP Site, trucks will be required to stop at the truck inspection station and will be examined for evidence of contaminated soil on the undercarriage, body, and wheels. Soil and debris will be removed. Brooms, shovels and potable water will be utilized for the removal of soil from vehicles and equipment, as necessary.

Extreme Storm Preparedness and Response Contingency Plan

Damage from flooding or storm surge can include dislocation of soil and stockpiled materials, dislocation of site structures and construction materials and equipment, and dislocation of support of excavation structures. Damage from wind during an extreme storm event can create unsafe or unstable structures, damage safety structures and cause downed power lines creating dangerous site conditions and loss of power. In the event of emergency conditions caused by an

extreme storm event, the enrollee will undertake the following steps for site preparedness prior to the event and response after the event.

Storm Preparedness

Preparations in advance of an extreme storm event will include the following: containerized hazardous materials and fuels will be removed from the property; loose materials will be secured to prevent dislocation and blowing by wind or water; heavy equipment such as excavators and generators will be removed from holes, trenches and depressions on the property to high ground or removed from the property; an inventory of the property with photographs will be performed to establish conditions for the site and equipment prior to the event; stockpile covers for soil and fill will be secured by adding weights such as sandbags for added security and worn or ripped stockpile covers will be replaced with competent covers; stockpiled hazardous wastes will be removed from the property; stormwater management systems will be inspected and fortified, including, as necessary: clean and reposition silt fences, haybales; clean storm sewer filters and traps; and secure and protect pumps and hosing.

Storm Response

At the conclusion of an extreme storm event, as soon as it is safe to access the property, a complete inspection of the property will be performed. A site inspection report will be submitted to OER at the completion of site inspection and after the site security is assessed. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. Damage from storm conditions that result in acute public safety threats, such as downed power lines or imminent collapse of buildings, structures or equipment will be reported to public safety authorities via appropriate means such as calling 911. Petroleum spills will be reported to NYS DEC within 2 hours of identification and consistent with State regulations. Emergency and spill conditions will also be reported to OER. Public safety structures, such as construction security fences will be repaired promptly to eliminate public safety threats. Debris will be collected and removed. Dewatering will be performed in compliance with existing laws and regulations and consistent with emergency notifications, if any, from proper authorities. Eroded areas of soil including unsafe slopes will be

stabilized and fortified. Dislocated materials will be collected and appropriately managed. Support of excavation structure will be inspected and fortified as necessary. Impacted stockpiles will be contained and damaged stockpile covers will be replaced. Storm-water control systems and structures will be inspected and maintained as necessary. If soil or fill materials are discharged off-Site to adjacent properties, property owners and OER will be notified and corrective measure plan designed to remove and clean dislocated material will be submitted to OER and implemented following approval by OER and granting of site access by the property owner. Impacted offsite areas may require characterization based on site conditions, at the discretion of OER. If on-Site petroleum spills are identified, a qualified environmental professional will determine the nature and extent of the spill and report to NYS DEC's spill hotline at DEC 800-457-7362. If the source of the spill is ongoing and can be identified, it should be stopped if this can be done safely. Potential hazards will be addressed immediately, consistent with guidance issued by NYS DEC.

Storm Response Reporting

A site inspection report will be submitted to OER at the completion of site inspection. An inspection report established by OER is available on OER's website (www.nyc.gov/oer) and will be used for this purpose. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. The site inspection report will be sent to the OER project manager and will include the site name, address, tax block and lot, site primary and alternate contact name and phone number. Damage and soil release assessment will include: whether the project had stockpiles; whether stockpiles were damaged; photographs of damage and notice of plan for repair; report of whether soil from the site was dislocated and whether any of the soil left the Site; estimates of the volume of soil that left the site, nature of impact, and photographs; description of erosion damage; description of equipment damage; description of damage to the remedial program or the construction program, such as damage to the support of excavation; presence of onsite or offsite exposure pathways caused by the storm; presence of petroleum or other spills and status of spill reporting to NYS DEC; description of corrective actions; schedule for corrective actions. This report should be completed and submitted to OER project manager with photographs within 24 hours of

the time of safe entry to the property after the storm event.

5.8 Traffic Control

Drivers of trucks leaving the NYC VCP Site with soil/fill will be instructed to proceed without stopping in the vicinity of the Site to prevent neighborhood impacts. The planned route is shown on Figure 8.

5.9 Demobilization

Demobilization will include:

- As necessary, restoration of temporary access areas and areas that may have been disturbed to accommodate support areas (e.g., staging areas, decontamination areas, storage areas, temporary water management areas, and access area);
- Removal of sediment from erosion control measures and truck wash and disposal of materials in accordance with applicable laws and regulations;
- Equipment decontamination, and;
- General refuse disposal.

Equipment will be decontaminated and demobilized at the completion of all field activities. Investigation equipment and large equipment (e.g., soil excavators) will be washed at the truck inspection station as necessary. In addition, all investigation and remediation derived waste will be appropriately disposed.

5.10 Reporting and Record Keeping

Daily Reports

Daily reports providing a general summary of activities for each day of *active remedial work* will be emailed to the OER Project Manager by the end of the following day. Those reports will include:

- Project number and statement of the activities and an update of progress made and locations of work performed;
- Quantities of material imported and exported from the Site;

- Status of on-Site soil/fill stockpiles;
- A summary of all citizen complaints, with relevant details (basis of complaint; actions taken; etc.);
- A summary of CAMP excursions, if any;
- Photograph of notable Site conditions and activities.

The frequency of the reporting period may be revised in consultation with OER project manager based on planned project tasks. Daily email reports are not intended to be the primary mode of communication for notification to OER of emergencies (accidents, spills), requests for changes to the RAWP or other sensitive or time critical information. However, such information will be included in the daily reports. Emergency conditions and changes to the RAWP will be communicated directly to the OER project manager by personal communication. Daily reports will be included as an Appendix in the Remedial Action Report.

Record Keeping and Photo-Documentation

Job-site record keeping for all remedial work will be performed. These records will be maintained on-Site during the project and will be available for inspection by OER staff. Representative photographs will be taken of the Site prior to any remedial activities and during major remedial activities to illustrate remedial program elements and contaminant source areas. Photographs will be submitted at the completion of the project in the RAR in digital format (i.e. jpeg files).

5.11 Complaint Management

All complaints from citizens will be promptly reported to OER. Complaints will be addressed and outcomes will also be reported to OER in daily reports. Notices to OER will include the nature of the complaint, the party providing the complaint, and the actions taken to resolve any problems.

5.12 Deviations from the Remedial Action Work Plan

All changes to the RAWP will be reported to the OER Project Manager and will be documented in daily reports and reported in the Remedial Action Report. The process to be followed if there

are any deviations from the RAWP will include a request for approval for the change from OER noting the following:

- Reasons for deviating from the approved RAWP;
- Effect of the deviations on overall remedy; and
- Determination that the remedial action with the deviation(s) is protective of public health and the environment.

6.0 REMEDIAL ACTION REPORT

A Remedial Action Report (RAR) will be submitted to OER following implementation of the remedial action defined in this RAWP. The RAR will document that the remedial work required under this RAWP has been completed and has been performed in compliance with this plan. The RAR will include:

- Information required by this RAWP;
- As-built drawings for all constructed remedial elements, required certifications, manifests and other written and photographic documentation of remedial work performed under this remedy;
- Site Management Plan;
- Description of any changes in the remedial action from the elements provided in this RAWP and associated design documents;
- Tabular summary of all end point sampling results and all material characterization results, QA/QC results for end-point sampling, and other sampling and chemical analysis performed as part of the remedial action and DUSR;
- Test results or other evidence demonstrating that remedial systems are functioning properly;
- Account of the source area locations and characteristics of all contaminated material removed from the Site including a map showing source areas;
- Account of the disposal destination of all contaminated material removed from the Site. Documentation associated with disposal of all material will include transportation and disposal records, and letters approving receipt of the material.
- Account of the origin and required chemical quality testing for material imported onto the Site.
- Continue registration of the property with an E-Designation by the NYC Department of Buildings.
- Reports and supporting material will be submitted in digital form.

Remedial Action Report Certification

The following certification will appear in front of the Executive Summary of the Remedial Action Report. The certification will include the following statements:

I, _____, am currently a professional engineer licensed by the State of New York. I had primary direct responsibility for implementation of the remedial program for the project at 138-142 North 10th Street, Brooklyn, NY, NYC VCP Site number 15CVCP077K.

I certify that the OER-approved Remedial Action Work Plan dated month day year and Stipulations in a letter dated month day, year; if any were implemented and that all requirements in those documents have been substantively complied with. I certify that contaminated soil, fill, liquids or other material from the property were taken to facilities licensed to accept this material in full compliance with applicable laws and regulations.

7.0 SCHEDULE

The table below presents a schedule for the proposed remedial action and reporting. If the schedule for remediation and development activities changes, it will be updated and submitted to OER. Currently, a 6 month remediation period is anticipated.

Schedule Milestone	Weeks from Remedial Action Start	Duration (weeks)
OER Approval of RAWP	0	-
Fact Sheet 2 announcing start of remedy	0	-
Mobilization	1	1
Remedial Excavation	2	6
Demobilization	10	1
Submit Remedial Action Report	20	-

ATTACHMENT B

CITIZEN PARTICIPATION PLAN

The NYC Office of Environmental Remediation and Bedford Acquisitions LLC have established this Citizen Participation Plan because the opportunity for citizen participation is an important component of the NYC Voluntary Cleanup Program. This Citizen Participation Plan describes how information about the project will be disseminated to the Community during the remedial process. As part of its obligations under the NYC VCP, Bedford Acquisitions LLC will maintain a repository for project documents and provide public notice at specified times throughout the remedial program. This Plan also takes into account potential environmental justice concerns in the community that surrounds the project Site. Under this Citizen Participation Plan, project documents and work plans are made available to the public in a timely manner. Public comment on work plans is strongly encouraged during public comment periods. Work plans are not approved by the NYC Office of Environmental Remediation (OER) until public comment periods have expired and all comments are formally reviewed. An explanation of cleanup plans in the form of a public meeting or informational session is available upon request to OER's project manager assigned to this Site, William Wong, who can be contacted about these issues or any others questions, comments or concerns that arise during the remedial process at (212) 341-0659.

Project Contact List. OER has established a Site Contact List for this project to provide public notices in the form of fact sheets to interested members of the Community. Communications will include updates on important information relating to the progress of the cleanup program at the Site as well as to request public comments on the cleanup plan. The Project Contact List includes owners and occupants of adjacent buildings and homes, principal administrators of nearby schools, hospitals and day care centers, the public water supplier that serves the area, established document repositories, the representative Community Board, City Council members, other elected representatives and any local Brownfield Opportunity Area (BOA) grantee organizations. Any member of the public or organization will be added to the Site Contact List on request. A copy of the Site Contact List is maintained by OER's project manager. If you would like to be added to the Project Contact List, contact NYC OER at (212) 788-8841 or by email at

brownfields@cityhall.nyc.gov.

Repositories. A document repository is maintained in online. Internet access to view OER’s document repositories is available at public libraries. This document repository is intended to house, for community review, all principal documents generated during the cleanup program including Remedial Investigation plans and reports, Remedial Action work plans and reports, and all public notices and fact sheets produced during the lifetime of the remedial project.

The library nearest the Site is:

Brooklyn Public Library - Greenpoint Branch
107 Norman Avenue at Leonard Street, Brooklyn, NY
Telephone Number: 718-349-8504

Hours of Operation:

Mon	closed
Tue	10:00AM - 6:00PM
Wed	10:00AM - 6:00PM
Thu	1:00PM - 8:00PM
Fri	10:00AM - 6:00PM
Sat	10:00AM - 5:00PM
Sun	closed

Digital Documentation. NYC OER strongly encourages the use of digital documents in repositories as a means of minimizing paper use while also increasing convenience in access and ease of use.

Identify Issues of Public Concern. The major issues of concern to the public will be potential impacts of nuisance odors and dust during the disturbance of historic fill soils at the Site. This

work will be performed in accordance with procedures which will be specified under a detailed Remedial Program which considers and takes preventive measures for exposures to future residents of the property and those on adjacent properties during construction. Detailed plans to monitor the potential for exposure including a Construction Health and Safety Plan and a Community Air Monitoring Plan are required components of the remedial program. Implementation of these plans will be under the direct oversight of the New York City Department of Environmental Remediation (NYCOER).

These plans will specify the following worker and community health and safety activities during remedial activity at the Site:

- On-Site air monitoring for worker protection,
- Perimeter air monitoring for community protection.

The Health and Safety Plan and the Community Air Monitoring Plan prepared as part of the Remedial Action Work Plan will be available for public review at the document repository.

Public Notice and Public Comment. Public notice to all members of the Project Contact List is required at three major steps during the performance of the cleanup program (listed below) and at other points that may be required by OER. Notices will include Fact Sheets with descriptive project summaries, updates on recent and upcoming project activities, repository information, and important phone and email contact information. All notices will be prepared by Bedford Acquisitions LLC, reviewed and approved by OER prior to distribution and mailed by Bedford Acquisitions LLC. Public comment is solicited in public notices for all work plans developed under the NYC Voluntary Cleanup Program. Final review of all work plans by OER will consider all public comments. Approval will not be granted until the public comment period has been completed.

Citizen Participation Milestones. Public notice and public comment activities occur at several steps during a typical NYC VCP project. See flow chart on the following page, which identifies when during the NYC VCP public notices are issued: These steps include:

- **Public Notice of the availability of the Remedial Investigation Report and Remedial Action Work Plan and a 30-day public comment period on the Remedial Action Work Plan.**

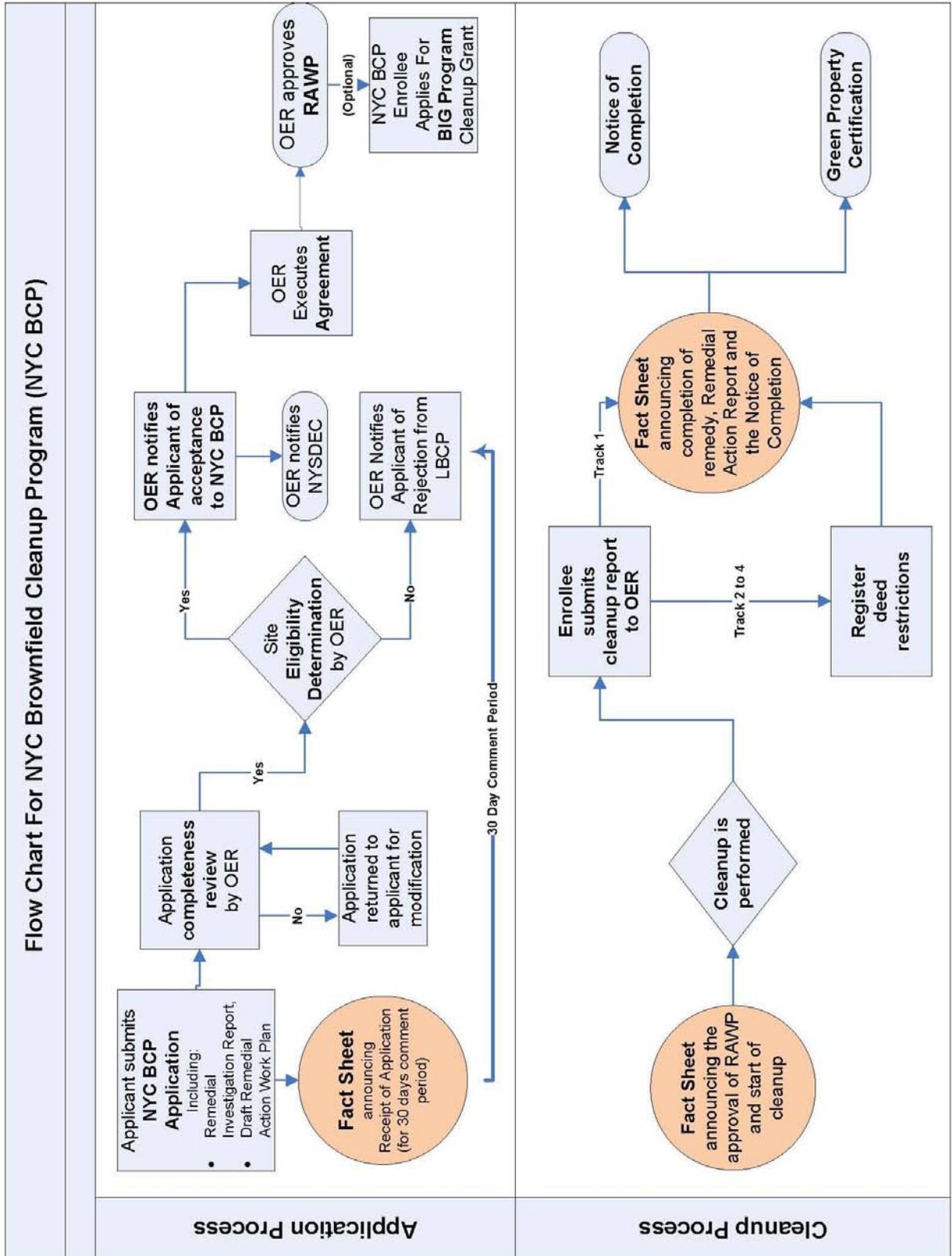
Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the availability of the Remedial Investigation Report and Remedial Action Work Plan and the initiation of a 30-day public comment period on the Remedial Action Work Plan. The Fact Sheet summarizes the findings of the RIR and provides details of the RAWP. The public comment period will be extended an additional 15 days upon public request. A public meeting or informational session will be conducted by OER upon request.

- **Public Notice announcing the approval of the RAWP and the start of remediation**

Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the approval of the RAWP and the start of remediation.

- **Public Notice announcing the completion of remediation, designation of Institutional and Engineering Controls and issuance of the Notice of Completion**

Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the completion of remediation, providing a list of all Institutional and Engineering Controls implemented for to the Site and announcing the issuance of the Notice of Completion.



ATTACHMENT C SUSTAINABILITY STATEMENT

This Sustainability Statement documents sustainable activities and green remediation efforts planned under this remedial action.

Reuse of Clean, Recyclable Materials. Reuse of clean, locally-derived recyclable materials reduces consumption of non-renewable virgin resources and can provide energy savings and greenhouse gas reduction.

This project intends to use recycled concrete aggregate wherever possible in grading and backfilling the Site. An estimate of the quantity (in tons) of clean, non-virgin materials (reported by type of material) reused under this plan will be quantified and reported in the RAR.

Reduce Consumption of Virgin and Non-Renewable Resources. Reduced consumption of virgin and non-renewable resources lowers the overall environmental impact of the project on the region by conserving these resources.

The project will reduce the consumption of virgin materials by substituting recycled concrete aggregate for mined gravel and/or sand backfill whenever possible. An estimate of the quantity (in tons) of virgin and non-renewable resources, the use of which will be avoided under this plan, will be quantified and reported in the RAR.

Reduced Energy Consumption and Promotion of Greater Energy Efficiency. Reduced energy consumption lowers greenhouse gas emissions, improves local air quality, lessens in-city power generation requirements, can lower traffic congestion, and provides substantial cost savings.

Recycled concrete materials and other backfill materials will be locally sourced reducing the energy consumption associated with transporting these materials to the Site. Best efforts will be made to quantify energy efficiencies achieved during the remediation and will be reported in the Remedial Action Report (RAR). Where energy savings cannot be easily quantified, a gross indicator of the amount of energy saved or the means by which energy savings was achieved will

be reported.

Paperless Voluntary Cleanup Program. Bedford Acquisitions LLC is participating in OER's Paperless Voluntary Cleanup Program. Under this program, submission of electronic documents will replace submission of hard copies for the review of project documents, communications and milestone reports.

Low-Energy Project Management Program. Bedford Acquisitions LLC is participating in OER's low-energy project management program. Under this program, whenever possible, meetings are held using remote communication technologies, such as videoconferencing and teleconferencing to reduce energy consumption and traffic congestion associated with personal transportation.

ATTACHMENT D

SOIL/MATERIALS MANAGEMENT PLAN

1.1 SOIL SCREENING METHODS

Visual, olfactory and PID soil screening and assessment will be performed under the supervision of a Qualified Environmental Professional and will be reported in the RAR. Soil screening will be performed during invasive work performed during the remedy and development phases prior to issuance of the Notice of Completion.

1.2 STOCKPILE METHODS

Excavated soil from suspected areas of contamination (e.g., hot spots, USTs, drains, etc.) will be stockpiled separately and will be segregated from clean soil and construction materials. Stockpiles will be used only when necessary and will be removed as soon as practicable. While stockpiles are in place, they will be inspected daily, and before and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. Excavated soils will be stockpiled on, at minimum, double layers of 8-mil minimum sheeting, will be kept covered at all times with appropriately anchored plastic tarps, and will be routinely inspected. Broken or ripped tarps will be promptly replaced.

All stockpile activities will be compliant with applicable laws and regulations. Soil stockpile areas will be appropriately graded to control run-off in accordance with applicable laws and regulations. Stockpiles of excavated soils and other materials shall be located at least of 50 feet from the property boundaries, where possible. Hay bales or equivalent will surround soil stockpiles except for areas where access by equipment is required. Silt fencing and hay bales will be used as needed near catch basins, surface waters and other discharge points.

1.3 CHARACTERIZATION OF EXCAVATED MATERIALS

Soil/fill or other excavated media that is transported off-Site for disposal will be sampled in a manner required by the receiving facility, and in compliance with applicable laws and regulations. Soils proposed for reuse on-Site will be managed as defined in this plan.

1.4 MATERIALS EXCAVATION, LOAD-OUT AND DEPARTURE

The PE/QEP overseeing the remedial action will:

- oversee remedial work and the excavation and load-out of excavated material;
- ensure that there is a party responsible for the safe execution of invasive and other work performed under this work plan;
- ensure that Site development activities and development-related grading cuts will not interfere with, or otherwise impair or compromise the remedial activities proposed in this RAWP;
- ensure that the presence of utilities and easements on the Site has been investigated and that any identified risks from work proposed under this plan are properly addressed by appropriate parties;
- ensure that all loaded outbound trucks are inspected and cleaned if necessary before leaving the Site; and
- ensure that all egress points for truck and equipment transport from the Site will be kept clean of Site-derived materials during Site remediation.

Locations where vehicles exit the Site shall be inspected daily for evidence of soil tracking off premises. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

Open and uncontrolled mechanical processing of historical fill and contaminated soil on-Site will not be performed without prior OER approval.

1.5 OFF-SITE MATERIALS TRANSPORT

Loaded vehicles leaving the Site will comply with all applicable materials transportation requirements (including appropriate covering, manifests, and placards) in accordance with applicable laws and regulations, including use of licensed haulers in accordance with 6 NYCRR Part 364. If loads contain wet material capable of causing leakage from trucks, truck liners will be used. Queuing of trucks will be performed on-Site, when possible in order to minimize off Site disturbance. Off-Site queuing will be minimized. The outbound truck transport route is shown on Figure 8.

This routing takes into account the following factors: (a) limiting transport through residential areas and past sensitive sites; (b) use of mapped truck routes; (c) minimizing off-Site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport. To the extent possible, all trucks loaded with Site materials will travel from the Site using these truck routes. Trucks will not stop or idle in the neighborhood after leaving the project Site.

1.6 MATERIALS DISPOSAL OFF-SITE

The following documentation will be established and reported by the PE/QEP for each disposal destination used in this project to document that the disposal of regulated material exported from the Site conforms with applicable laws and regulations: (1) a letter from the PE/QEP or Enrollee to each disposal facility describing the material to be disposed and requesting written acceptance of the material. This letter will state that material to be disposed is regulated material generated at an environmental remediation Site in Brooklyn, New York under a governmental remediation program. The letter will provide the project identity and the name and phone number of the PE/QEP or Enrollee. The letter will include as an attachment a summary of all chemical data for the material being transported; and (2) a letter from each disposal facility stating it is in receipt of the correspondence (1, above) and is approved to accept the material. These documents will be included in the RAR.

The Remedial Action Report will include an itemized account of the destination of all material removed from the Site during this remedial action. Documentation associated with disposal of all material will include records and approvals for receipt of the material. This information will be presented in the RAR.

All impacted soil/fill or other waste excavated and removed from the Site will be managed as regulated material and will be disposed in accordance with applicable laws and regulations. Historic fill and contaminated soils taken off-Site will be handled as solid waste and will not be disposed at a Part 360-16 Registration Facility (also known as a Soil Recycling Facility).

Waste characterization will be performed for off-Site disposal in a manner required by the receiving facility and in conformance with its applicable permits. Waste characterization sampling and analytical methods, sampling frequency, analytical results and QA/QC will be reported in the RAR. A manifest system for off-Site transportation of exported materials will be employed. Manifest information will be reported in the RAR. Hazardous wastes derived from on-Site will be stored, transported, and disposed of in compliance with applicable laws and regulations.

If disposal of soil/fill from this Site is proposed for unregulated disposal (i.e., clean soil removed for development purposes), including transport to a Part 360-16 Registration Facility, a formal request will be made for approval by OER with an associated plan compliant with 6NYCRR Part 360-16. This request and plan will include the location, volume and a description of the material to be recycled, including verification that the material is not impacted by site uses and that the material complies with receipt requirements for recycling under 6NYCRR Part 360. This material will be appropriately handled on-Site to prevent mixing with impacted material.

1.7 MATERIALS REUSE ON-SITE

Soil and fill that is derived from the property that meets the soil cleanup objectives established in this plan may be reused on-Site. The soil cleanup objectives for on-Site reuse are listed in Table 1. 'Reuse on-Site' means material that is excavated during the remedy or development, does not leave the property, and is relocated within the same property and on comparable soil/fill material, and addressed pursuant to the NYC VCP agreement subject to Engineering and Institutional Controls. The PE/QEP will ensure that reused materials are segregated from other materials to be exported from the Site and that procedures defined for material reuse in this RAWP are followed.

Organic matter (wood, roots, stumps, etc.) or other waste derived from clearing and grubbing of the Site will not be buried on-Site. Soil or fill excavated from the site for grading or other purposes will not be reused within a cover soil layer or within landscaping berms.

1.8 DEMARCATION

After completion of hotspot removal and any other invasive remedial activities, and prior to backfilling, the top of the residual soil/fill will be defined by one of three methods: (1) placement of a demarcation layer. The demarcation layer will consist of geosynthetic fencing or equivalent material to be placed on the surface of residual soil/fill to provide an observable reference layer. A description or map of the approximate depth of the demarcation layer will be provided in the SMP; or (2) a land survey of the top elevation of residual soil/fill before the placement of cover soils, pavement and associated sub-soils, or other materials or structures or, (3) all materials beneath the approved cover will be considered impacted and subject to site management after the remedy is complete. Demarcation may be established by one or any combination of these three methods. As appropriate, a map showing the method of demarcation for the Site and all associated documentation will be presented in the RAR.

This demarcation will constitute the top of the site management horizon. Materials within this horizon require adherence to special conditions during future invasive activities as defined in the Site Management Plan.

1.9 IMPORT OF BACKFILL SOIL FROM OFF-SITE SOURCES

This Section presents the requirements for imported fill materials to be used below the cover layer and within the clean soil cover layer. All imported soils will meet OER-approved backfill and cover soil quality objectives for this Site. The backfill and cover soil quality objectives are listed in Table 1.

A process will be established to evaluate sources of backfill and cover soil to be imported to the Site, and will include an examination of source location, current and historical use(s), and any applicable documentation. Material from industrial sites, spill sites, environmental remediation sites or other potentially contaminated sites will not be imported to the Site.

The following potential sources may be used pending attainment of backfill and cover soil quality objectives:

- Clean soil from construction projects at non-industrial sites in compliance with applicable laws and regulations;
- Clean soil from roadway or other transportation-related projects in compliance with applicable laws and regulations;
- Clean recycled concrete aggregate (RCA) from facilities permitted or registered by the regulations of NYS DEC.

All materials received for import to the Site will be approved by a PE/QEP and will be in compliance with provisions in this RAWP. The RAR will report the source of the fill, evidence that an inspection was performed on the source, chemical sampling results, frequency of testing, and a Site map indicating the locations where backfill or soil cover was placed.

Source Screening and Testing

Inspection of imported fill material will include visual, olfactory and PID screening for evidence of contamination. Materials imported to the Site will be subject to inspection, as follows:

- Trucks with imported fill material will be in compliance with applicable laws and regulations and will enter the Site at designated locations;
- The PE/QEP is responsible to ensure that every truck load of imported material is inspected for evidence of contamination; and
- Fill material will be free of solid waste including pavement materials, debris, stumps, roots, and other organic matter, as well as ashes, oil, perishables or foreign matter.

Composite samples of imported material will be taken at a minimum frequency of one sample for every 500 cubic yards of material. Once it is determined that the fill material meets imported backfill or cover soil chemical requirements and is non-hazardous, and lacks petroleum contamination, the material will be loaded onto trucks for delivery to the Site.

Recycled concrete aggregate (RCA) will be imported from facilities permitted or registered by NYSDEC. Facilities will be identified in the RAR. A PE/QEP is responsible to ensure that the facility is compliant with 6NYCRR Part 360 registration and permitting requirements for the period of acquisition of RCA. RCA imported from compliant facilities will not require additional

testing, unless required by NYSDEC under its terms for operation of the facility. RCA imported to the Site must be derived from recognizable and uncontaminated concrete. RCA material is not acceptable for, and will not be used as cover material.

1.10 FLUIDS MANAGEMENT

All liquids to be removed from the Site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable laws and regulations. Liquids discharged into the New York City sewer system will receive prior approval by New York City Department of Environmental Protection (NYC DEP). The NYC DEP regulates discharges to the New York City sewers under Title 15, Rules of the City of New York Chapter 19. Discharge to the New York City sewer system will require an authorization and sampling data demonstrating that the groundwater meets the City's discharge criteria. The dewatering fluid will be pretreated as necessary to meet the NYC DEP discharge criteria. If discharge to the City sewer system is not appropriate, the dewatering fluids will be managed by transportation and disposal at an off-Site treatment facility.

Discharge of water generated during remedial construction to surface waters (i.e. a stream or river) is prohibited without a SPDES permit issued by New York State Department of Environmental Conservation.

1.11 STORM-WATER POLLUTION PREVENTION

Applicable laws and regulations pertaining to storm-water pollution prevention will be addressed during the remedial program. Erosion and sediment control measures identified in this RAWP (silt fences and barriers, and hay bale checks) will be installed around the entire perimeter of the remedial construction area and inspected once a week and after every storm event to ensure that they are operating appropriately. Discharge locations will be inspected to determine whether erosion control measures are effective in preventing significant impacts to receptors. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. All necessary repairs shall be made immediately. Accumulated sediments will be removed as required to keep the barrier and hay bale check functional. Undercutting or erosion of the silt fence toe anchor will be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

1.12 CONTINGENCY PLAN

This contingency plan is developed for the remedial construction to address the discovery of unknown structures or contaminated media during excavation. Identification of unknown contamination source areas during invasive Site work will be promptly communicated to OER's Project Manager. Petroleum spills will be reported to the NYS DEC Spill Hotline. These findings will be included in the daily report. If previously unidentified contaminant sources are found during on-Site remedial excavation or development-related excavation, sampling will be performed on contaminated source material and surrounding soils and reported to OER. Chemical analytical testing will be performed for TAL metals, TCL volatiles and semi-volatiles, TCL pesticides and PCBs, as appropriate.

1.13 ODOR, DUST AND NUISANCE CONTROL

Odor Control

All necessary means will be employed to prevent on- and off-Site odor nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; and (c) use of foams to cover exposed odorous soils. If odors develop and cannot otherwise be controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-Site disposal; and (e) use of chemical odorants in spray or misting systems.

This odor control plan is capable of controlling emissions of nuisance odors. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. OER will be notified of all odor complaint events. Implementation of all odor controls, including halt of work, will be the responsibility of the PE/QEP's certifying the Remedial Action Report.

Dust Control

Dust management during invasive on-Site work will include, at a minimum:

- Use of a dedicated water spray methodology for roads, excavation areas and stockpiles.
- Use of properly anchored tarps to cover stockpiles.
- Exercise extra care during dry and high-wind periods.
- Use of gravel or recycled concrete aggregate on egress and other roadways to provide a clean and dust-free road surface.

This dust control plan is capable of controlling emissions of dust. If nuisance dust emissions are identified, work will be halted and the source of dusts will be identified and corrected. Work will not resume until all nuisance dust emissions have been abated. OER will be notified of all dust complaint events. Implementation of all dust controls, including halt of work, will be the responsibility of the PE/QEP's responsible for certifying the Remedial Action Report.

Other Nuisances

Noise control will be exercised during the remedial program. All remedial work will conform, at a minimum, to NYC noise control standards.

Rodent control will be provided, during Site clearing and grubbing, and during the remedial program, as necessary, to prevent nuisances.

ATTACHMENT E
HEALTH AND SAFETY PLAN

TABLES

TABLE 1
Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
METALS							
Arsenic	7440-38 -2	16 _f	16 _f	16 _f	16 _f	13 _f	16 _f
Barium	7440-39 -3	350 _f	400	400	10,000 _d	433	820
Beryllium	7440-41 -7	14	72	590	2,700	10	47
Cadmium	7440-43 -9	2.5 _f	4.3	9.3	60	4	7.5
Chromium, hexavalent _h	18540-29-9	22	110	400	800	1 _e	19
Chromium, trivalent _h	16065-83-1	36	180	1,500	6,800	41	NS
Copper	7440-50 -8	270	270	270	10,000 _d	50	1,720
Total Cyanide _h		27	27	27	10,000 _d	NS	40
Lead	7439-92 -1	400	400	1,000	3,900	63 _f	450
Manganese	7439-96 -5	2,000 _f	2,000 _f	10,000 _d	10,000 _d	1600 _f	2,000 _f
Total Mercury		0.81 _j	0.81 _j	2.8 _j	5.7 _j	0.18 _f	0.73
Nickel	7440-02 -0	140	310	310	10,000 _d	30	130
Selenium	7782-49 -2	36	180	1,500	6,800	3.9 _f	4 _f
Silver	7440-22 -4	36	180	1,500	6,800	2	8.3
Zinc	7440-66 -6	2200	10,000 _d	10,000 _d	10,000 _d	109 _f	2,480
PESTICIDES / PCBs							
2,4,5-TP Acid (Silvex)	93-72-1	58	100 _a	500 _b	1,000 _c	NS	3.8
4,4'-DDE	72-55-9	1.8	8.9	62	120	0.0033 _e	17
4,4'-DDT	50-29-3	1.7	7.9	47	94	0.0033 _e	136
4,4'-DDD	72-54-8	2.6	13	92	180	0.0033 _e	14
Aldrin	309-00-2	0.019	0.097	0.68	1.4	0.14	0.19
alpha-BHC	319-84-6	0.097	0.48	3.4	6.8	0.04 _g	0.02
beta-BHC	319-85-7	0.072	0.36	3	14	0.6	0.09
Chlordane (alpha)	5103-71 -9	0.91	4.2	24	47	1.3	2.9
delta-BHC	319-86-8	100 _a	100 _a	500 _b	1,000 _c	0.04 _g	0.25
Dibenzofuran	132-64-9	14	59	350	1,000 _c	NS	210
Dieldrin	60-57-1	0.039	0.2	1.4	2.8	0.006	0.1
Endosulfan I	959-98-8	4.8 _i	24 _i	200 _i	920 _i	NS	102
Endosulfan II	33213-65-9	4.8 _i	24 _i	200 _i	920 _i	NS	102
Endosulfan sulfate	1031-07 -8	4.8 _i	24 _i	200 _i	920 _i	NS	1,000 _c
Endrin	72-20-8	2.2	11	89	410	0.014	0.06
Heptachlor	76-44-8	0.42	2.1	15	29	0.14	0.38
Lindane	58-89-9	0.28	1.3	9.2	23	6	0.1
Polychlorinated biphenyls	1336-36 -3	1	1	1	25	1	3.2
SEMI-VOLATILES							
Acenaphthene	83-32-9	100 _a	100 _a	500 _b	1,000 _c	20	98
Acenaphthylene	208-96-8	100 _a	100 _a	500 _b	1,000 _c	NS	107
Anthracene	120-12-7	100 _a	100 _a	500 _b	1,000 _c	NS	1,000 _c
Benz(a)anthracene	56-55-3	1 _f	1 _f	5.6	11	NS	1 _f
Benzo(a)pyrene	50-32-8	1 _f	1 _f	1 _f	1.1	2.6	22
Benzo(b) fluoranthene	205-99-2	1 _f	1 _f	5.6	11	NS	1.7
Benzo(g,h,i) perylene	191-24-2	100 _a	100 _a	500 _b	1,000 _c	NS	1,000 _c
Benzo(k) fluoranthene	207-08-9	1	3.9	56	110	NS	1.7
Chrysene	218-01-9	1 _f	3.9	56	110	NS	1 _f
Dibenz(a,h) anthracene	53-70-3	0.33 _e	0.33 _e	0.56	1.1	NS	1,000 _c
Fluoranthene	206-44-0	100 _a	100 _a	500 _b	1,000 _c	NS	1,000 _c
Fluorene	86-73-7	100 _a	100 _a	500 _b	1,000 _c	30	386
Indeno(1,2,3-cd) pyrene	193-39-5	0.5 _f	0.5 _f	5.6	11	NS	8.2
m-Cresol	108-39-4	100 _a	100 _a	500 _b	1,000 _c	NS	0.33 _e
Naphthalene	91-20-3	100 _a	100 _a	500 _b	1,000 _c	NS	12
o-Cresol	95-48-7	100 _a	100 _a	500 _b	1,000 _c	NS	0.33 _e
p-Cresol	106-44-5	34	100 _a	500 _b	1,000 _c	NS	0.33 _e
Pentachlorophenol	87-86-5	2.4	6.7	6.7	55	0.8 _e	0.8 _e
Phenanthrene	85-01-8	100 _a	100 _a	500 _b	1,000 _c	NS	1,000 _c
Phenol	108-95-2	100 _a	100 _a	500 _b	1,000 _c	30	0.33 _e
Pyrene	129-00-0	100 _a	100 _a	500 _b	1,000 _c	NS	1,000 _c

TABLE 1
Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
VOLATILES							
1,1,1-Trichloroethane	71-55-6	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	0.68
1,1-Dichloroethane	75-34-3	19	26	240	480	NS	0.27
1,1-Dichloroethene	75-35-4	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	0.33
1,2-Dichlorobenzene	95-50-1	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	1.1
1,2-Dichloroethane	107-06-2	2.3	3.1	30	60	10	0.02 ^r
cis-1,2-Dichloroethene	156-59-2	59	100 ^a	500 ^b	1,000 ^c	NS	0.25
trans-1,2-Dichloroethene	156-60-5	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	0.19
1,3-Dichlorobenzene	541-73-1	17	49	280	560	NS	2.4
1,4-Dichlorobenzene	106-46-7	9.8	13	130	250	20	1.8
1,4-Dioxane	123-91-1	9.8	13	130	250	0.1 ^e	0.1 ^e
Acetone	67-64-1	100 ^a	100 ^b	500 ^b	1,000 ^c	2.2	0.05
Benzene	71-43-2	2.9	4.8	44	89	70	0.06
Butylbenzene	104-51-8	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	12
Carbon tetrachloride	56-23-5	1.4	2.4	22	44	NS	0.76
Chlorobenzene	108-90-7	100 ^a	100 ^a	500 ^b	1,000 ^c	40	1.1
Chloroform	67-66-3	10	49	350	700	12	0.37
Ethylbenzene	100-41-4	30	41	390	780	NS	1
Hexachlorobenzene	118-74-1	0.33 ^e	1.2	6	12	NS	3.2
Methyl ethyl ketone	78-93-3	100 ^a	100 ^a	500 ^b	1,000 ^c	100 ^a	0.12
Methyl tert-butyl ether	1634-04 -4	62	100 ^a	500 ^b	1,000 ^c	NS	0.93
Methylene chloride	75-09-2	51	100 ^a	500 ^b	1,000 ^c	12	0.05
n-Propylbenzene	103-65-1	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	3.9
sec-Butylbenzene	135-98-8	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	11
tert-Butylbenzene	98-06-6	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	5.9
Tetrachloroethene	127-18-4	5.5	19	150	300	2	1.3
Toluene	108-88-3	100 ^a	100 ^a	500 ^b	1,000 ^c	36	0.7
Trichloroethene	79-01-6	10	21	200	400	2	0.47
1,2,4-Trimethylbenzene	95-63-6	47	52	190	380	NS	3.6
1,3,5-Trimethylbenzene	108-67-8	47	52	190	380	NS	8.4
Vinyl chloride	75-01-4	0.21	0.9	13	27	NS	0.02
Xylene (mixed)	1330-20 -7	100 ^a	100 ^a	500 ^b	1,000 ^c	0.26	1.6

All soil cleanup objectives (SCOs) are in parts per million (ppm). NS=Not specified. See Technical Support Document (TSD). Footnotes

a The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

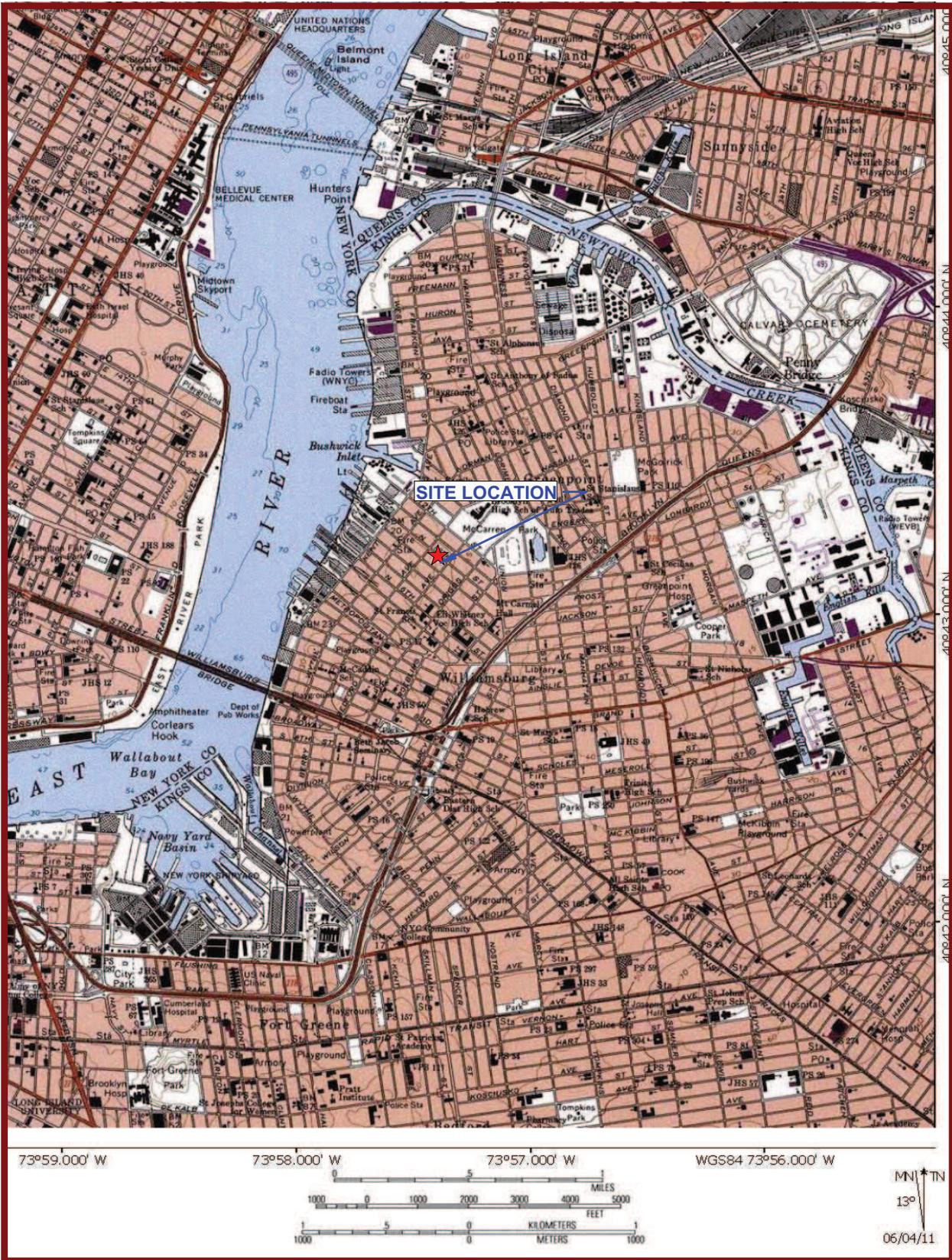
b The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

c The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

d The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

e For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the SCO value.

FIGURES



USGS Brooklyn Quadrangle 1995, Contour interval = 10 feet



ENVIRONMENTAL BUSINESS CONSULTANTS

Phone 631.504.6000
Fax 631.924.2870

138-142 NORTH 10TH STREET BROOKLYN NY
BLOCK 2304 LOTS 12, 13 & 14

FIGURE 1

SITE LOCATION MAP

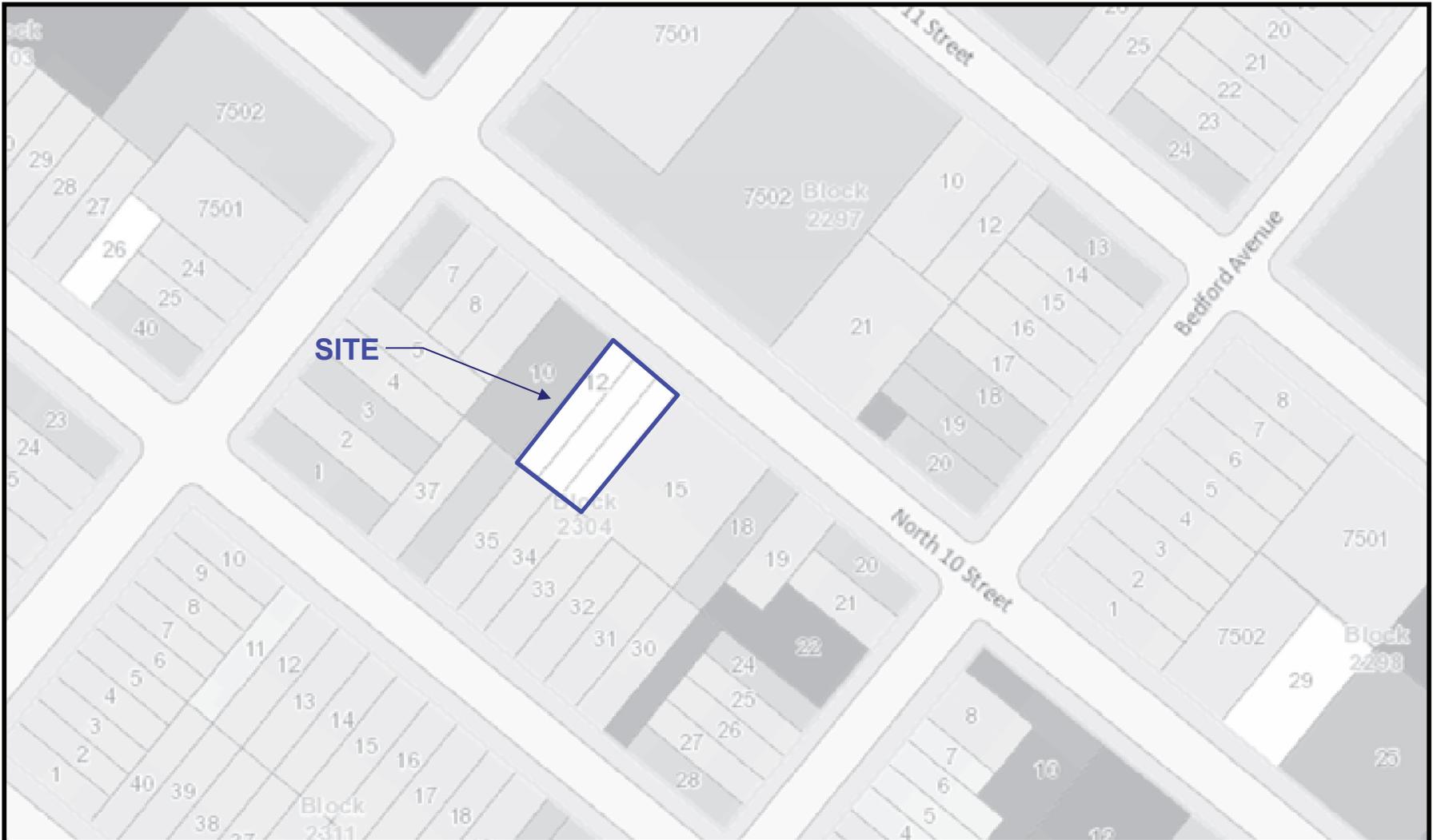


FIGURE 2 – LOT DIAGRAM



SITE NAME: 138-142 North 10th Street
STREET ADDRESS: 138-142 North 10th Street
MUNICIPALITY, STATE, ZIP: Brooklyn, NY 11211



Environmental Business Consultants

Phone 631.504.6000
Fax 631.924.2870



FIGURE 4
SURROUNDING LAND USE MAP

138 No 10th STREET, BROOKLYN NY 11249
 HAZARDOUS MATERIALS REMEDIAL INVESTIGATION REPORT

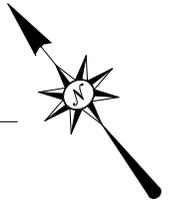


ENVIRONMENTAL BUSINESSS CONSULTANTS

1808 Middle Country Road, Ridge, New York 11961

Phone: (631) 504-6000 Fax: (631) 924-2870

NORTH 10th STREET



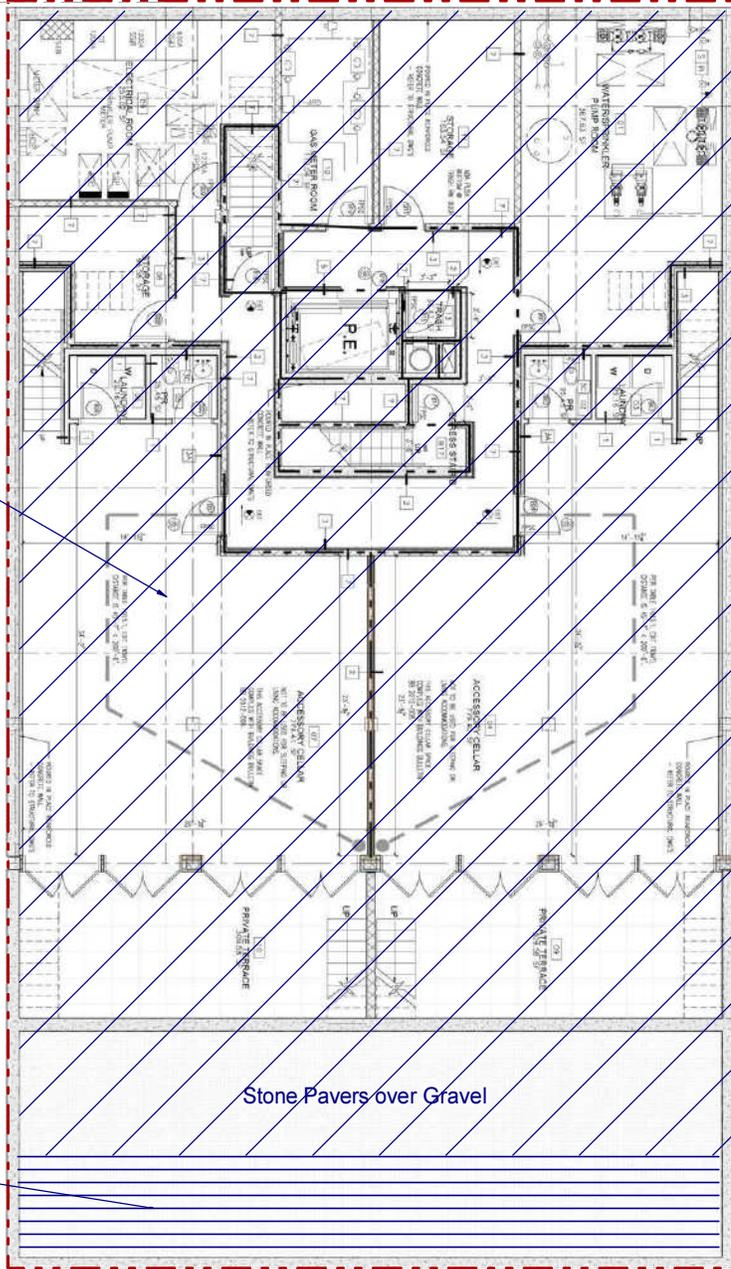
SIDEWALK

56.25ft

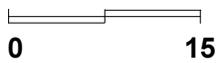
100 ft

Excavation to 12ft bgs

Excavation to 6ft bgs
and 2 ft Clean Soil Cap



SCALE:



1 Inch = 15 feet

KEY:

--- Property Boundary

Figure No.
5

Site Name: **REDEVELOPMENT PROJECT**
Site Address: **138-142 NORTH 10TH STREET, BROOKLYN, NY**
Drawing Title: **EXCAVATING AND CAPPING PLAN**

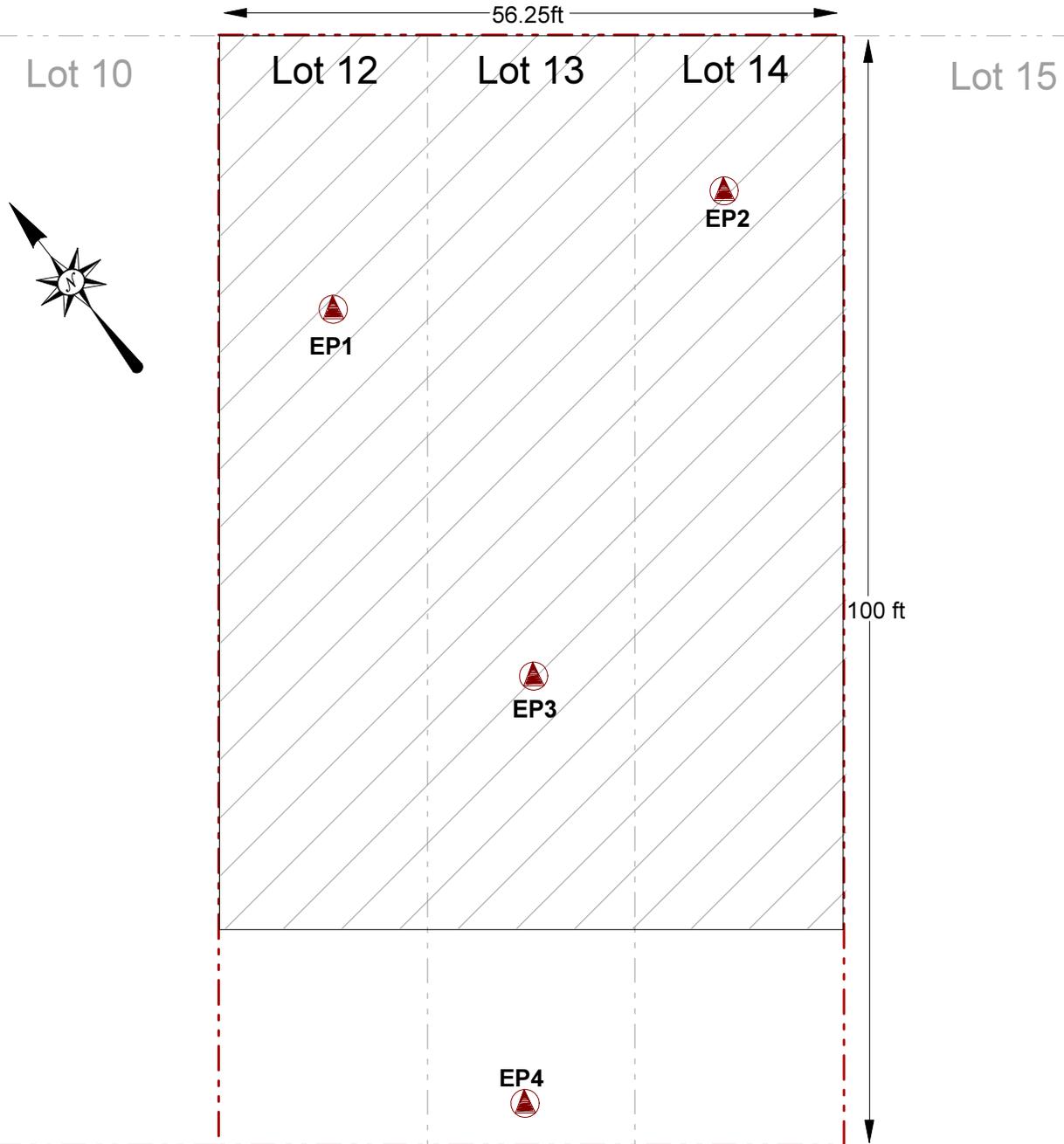


ENVIRONMENTAL BUSINESS CONSULTANTS

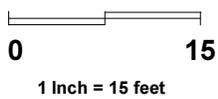
Phone 631.504.6000
Fax 631.924.2870

NORTH 10th STREET

SIDEWALK



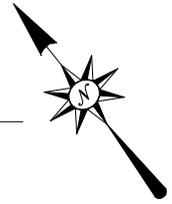
SCALE:



KEY:

-  Property Boundary
-  Proposed Building Location
-  EPx Endpoint Sample Location

NORTH 10th STREET

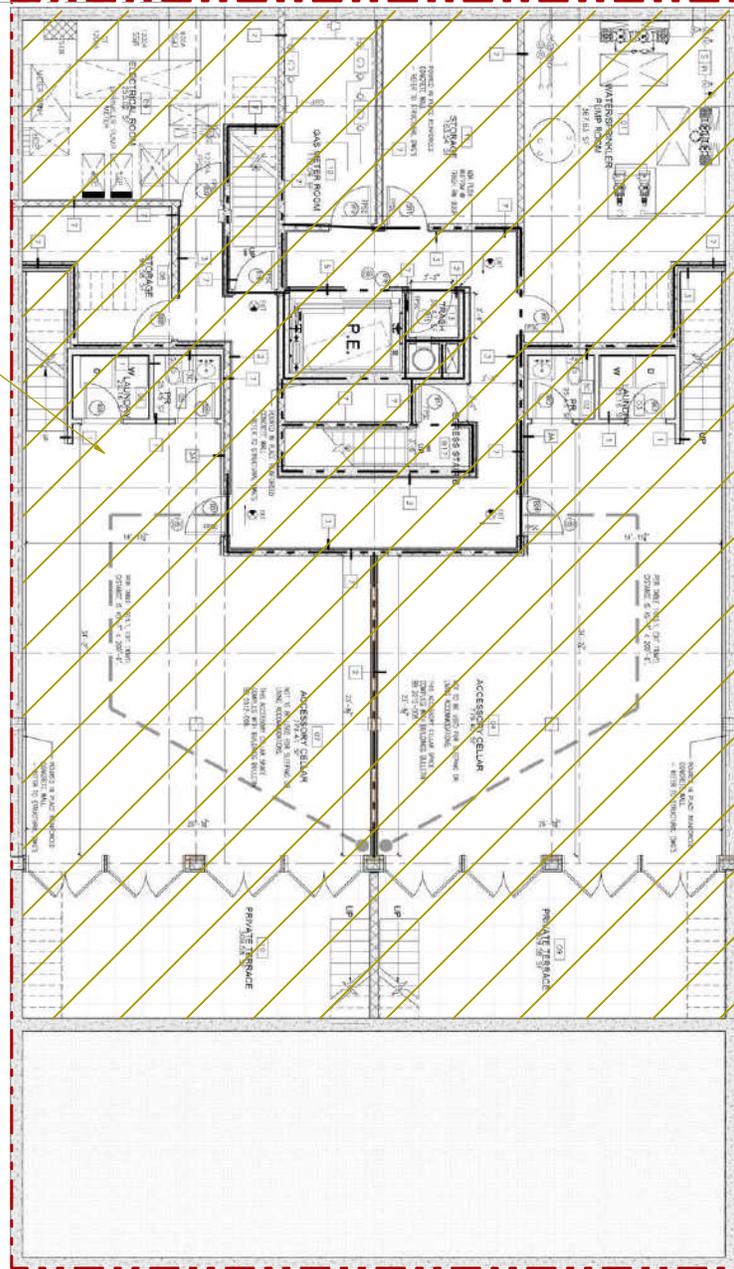


SIDEWALK

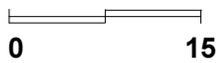
56.25ft

100 ft

Grace Preprufe 300R
Vapor Barrier System



SCALE:



1 Inch = 15 feet

KEY:

--- Property Boundary

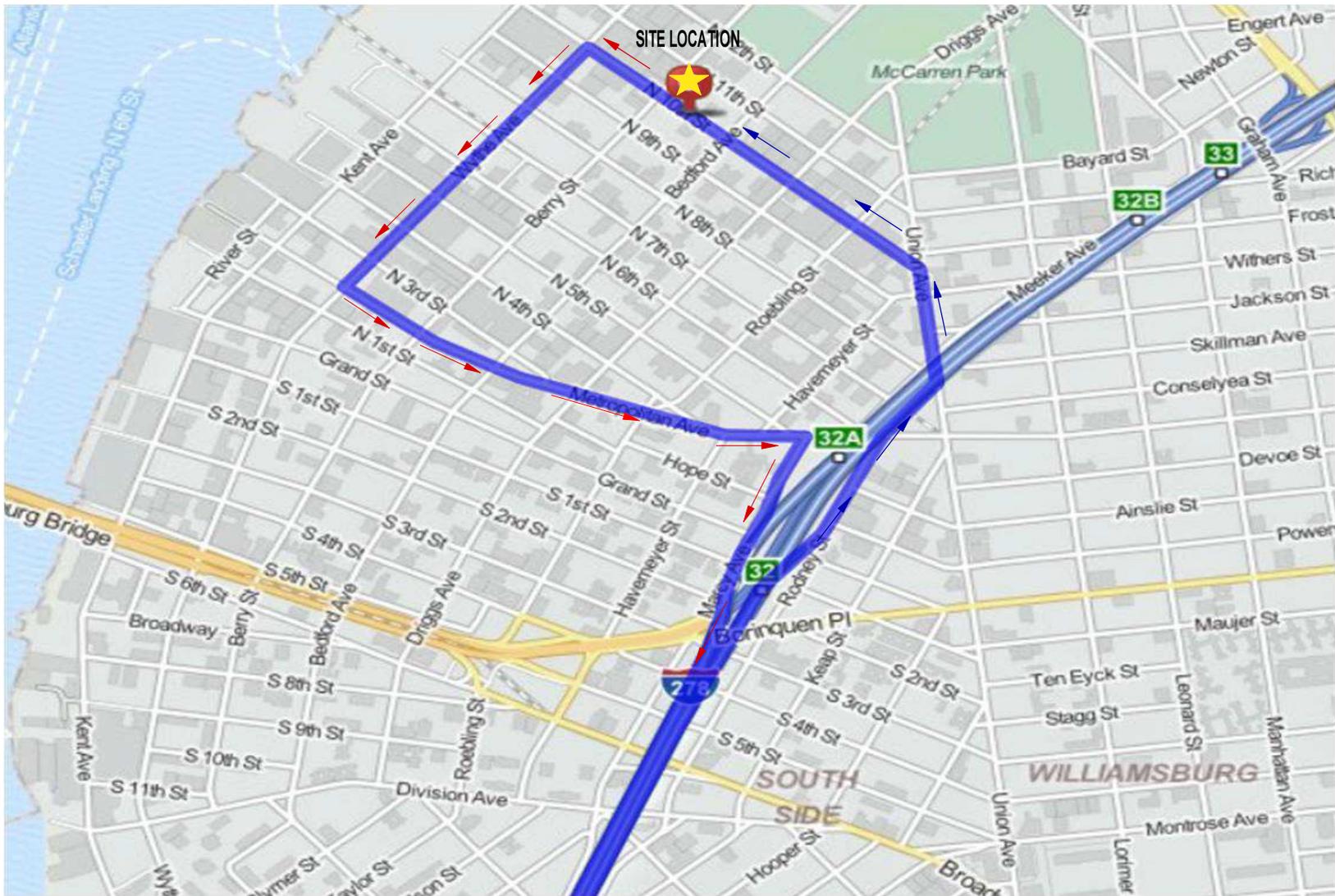
Figure No.
7

Site Name:	REDEVELOPMENT PROJECT
Site Address:	138-142 NORTH 10TH STREET, BROOKLYN, NY
Drawing Title:	VAPOR BARRIER PLAN



ENVIRONMENTAL BUSINESS CONSULTANTS

Phone 631.504.6000
Fax 631.924.2870



Key

 Truck Route to the Site

 Truck Route from the Site

 ENVIRONMENTAL BUSINESS CONSULTANTS	Phone 631.504.6000 Fax 631.924.2870	Figure No. 8	Site Name: REDEVELOPMENT PROJECT
			Site Address: 138-142 NORTH 10TH ST, BROOKLYN, NY
			Drawing Title: TRUCK ROUTE MAP

ATTACHMENT A
Redevelopment Plans



NORTH 10TH STREET FILING DOCUMENTS

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

OWNER:
BEDFORD ACQUISITIONS, LLC
1407 BROADWAY
41ST FLOOR
NEW YORK, NY 10018
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NEW YORK NY 10003
PHONE: 212-982-2020

STRUCTURAL ENGINEER:
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3RD FLOOR
NEW YORK, NY 10017
PHONE: 212-687-8888

MEP ENGINEER:
GLICKMAN ENGINEERING ASSOCIATES
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PHONE: 212-643-8016

CODE CONSULTANT:
RELIABLE EXPEDITING INC.
777 KENT AVENUE
SUITE 212
BROOKLYN, NY 11205
PHONE: 212-643-8016

MORRIS ADJMI ARCHITECTS

DATE 1-Dec-14
COVER SHEET

G-000.00

DRAWING LIST

Sheet Number	Sheet Title	FILING DOCUMENTS			
G-000.00	COVER SHEET	●			
G-001.00	LIST OF DRAWINGS	●			
G-002.00	BUILDING DEPARTMENT INFORMATION	●			
G-003.00	BUILDING DEPARTMENT INFORMATION	●			
G-004.00	BUILDING DEPARTMENT INFORMATION	●			
G-005.00	BUILDING DEPARTMENT INFORMATION	●			
G-006.00	CONTRACTOR NOTES, SYMBOLS, AND ABBREVIATIONS	●			
G-007.00	ACCESSIBILITY REQUIREMENTS	●			
G-008.00	ACCESSIBILITY REQUIREMENTS	●			
G-009.00	PLOT PLAN AND ZONING MAP	●			
G-010.00	FLOOD ZONE MAP	●			
G-011.00	SITE PLAN AND SITE SURVEY	●			
EN-001.00	ENERGY CODE COMPLIANCE DIAGRAMS	●			
Z-001.00	ZONING INFORMATION	●			
Z-002.00	ZONING DEDUCTIONS	●			
A-100.00	CELLAR FLOOR PLAN	●			
A-101.00	FIRST FLOOR PLAN	●			
A-102.00	SECOND FLOOR PLAN	●			
A-103.00	THIRD FLOOR PLAN	●			
A-104.00	FOURTH FLOOR PLAN	●			
A-105.00	FIFTH FLOOR PLAN	●			
A-106.00	SIXTH FLOOR PLAN	●			
A-107.00	ROOF PLAN	●			
A-108.00	BULKHEAD PLAN	●			
A-200.00	NORTH ELEVATION	●			
A-201.00	SOUTH ELEVATION	●			
A-202.00	WEST AND EAST ELEVATION	●			
A-300.00	BUILDING SECTION	●			
A-310.00	EGRESS STAIRS SECTIONS	●			
A-504.00	MISCELLANEOUS DETAILS	●			
A-600.00	PARTITION TYPES	●			
A-610.00	DOOR SCHEDULE	●			

NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

DECEMBER 01, 2014 FILING DOCUMENTS

REVISION	ISSUE	REMARKS

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PHONE: 203.877.6340

SURVEYOR:
LEONARD J. STRANDBERG &
ASSOCIATES, P.C.
32 SMITH STREET
FREEPORT, NY, 11520
PHONE: 516.378.2044/212.213.4300



DATE 1-Dec-14

SCALE NTS

LIST OF DRAWINGS

G-001.00

GENERAL BUILDING HEIGHTS AND AREAS

PREMISES IDENTIFICATION (BC 501.2)

- APPROVED NUMBERS OR ADDRESSES SHALL BE PROVIDED FOR NEW BUILDINGS AND SHALL BE PLACED TO BE CLEARLY VISIBLE AND LEGIBLE FROM THE STREET. LETTERS AND NUMBERS SHALL BE MINIMUM 4 INCHES TALL WITH A MINIMUM 0.5 INCH STROKE AND OF A CONTRASTING COLOR TO THE BACKGROUND.

GENERAL HEIGHT AND AREA LIMITATIONS (BC 504.1)

- ALLOWABLE HEIGHT AND AREA LIMITATIONS ARE AS LISTED IN TABLE 503

ALLOWABLE HEIGHT AND BUILDING AREAS (TABLE 503)

GROUP	TYPE OF CONSTRUCTION	LIMITATIONS	
		STORIES	UNLIMITED HEIGHT
R2	TYPE IB	UNLIMITED	UNLIMITED

INCIDENTAL USE AREAS (508.2)

- INCIDENTAL USE AREAS SHALL BE SEPARATED OR PROTECTED FROM ALL OTHER OCCUPANCIES IN ACCORDANCE WITH TABLE 508.2. (BC 508.2.2)
- SEPARATIONS OF INCIDENTAL USE AREAS SHALL BE WITH A FIRE BARRIER CONSTRUCTED IN ACCORDANCE WITH SECTION 706 AND/OR A HORIZONTAL ASSEMBLY CONSTRUCTED IN ACCORDANCE WITH SECTION 711. (BC 508.2.2.1)

INCIDENTAL USE AREA (TABLE 508.2)

INCIDENTAL USE AREAS WITHIN AND SERVING A DWELLING ARE NOT REQUIRED TO COMPLY WITH THIS SECTION (BC 508.2)

ROOM OR AREA	SEPARATION ^a
FURNACE ROOM WHERE ANY PIECE OF EQUIPMENT IS 400,000 BTU PER HOUR INPUT OR LESS, EXCEPT R-3 OCCUPANCY	1 HOUR OR PROVIDE AUTOMATIC SPRINKLER SYSTEM
ROOMS WITH ANY BOILER OVER 15 PSI AND 10 HORSEPOWER	2 HOUR; OR, 1 HOUR AND PROVIDE AUTOMATIC FIRE-EXTINGUISHING SYSTEM
ROOMS WITH A BOILER 15 PSI OR LESS AND 10 HORSEPOWER OR LESS, EXCEPT IN R-3 OCCUPANCY	1 HOUR OR PROVIDE AUTOMATIC SPRINKLER SYSTEM
MECHANICAL OR ELECTRICAL EQUIPMENT ROOM, EXCEPT IN R-3 OCCUPANCY	1 HOUR OR PROVIDE AUTOMATIC SPRINKLER SYSTEM
PARKING GARAGE (SECTION 406.2)	2 HOURS; OR, 1 HOUR AND PROVIDE AUTOMATIC FIRE-EXTINGUISHING SYSTEM
LAUNDRY ROOMS OVER 100 SQUARE FEET, EXCEPT WITHIN DWELLING UNITS	1 HOUR OR PROVIDE AUTOMATIC FIRE-EXTINGUISHING SYSTEM
STORAGE ROOMS OVER 100 SQUARE FEET, EXCEPT IN R-3 OCCUPANCY	1 HOUR OR PROVIDE AUTOMATIC FIRE-EXTINGUISHING SYSTEM
WASTE AND LINEN COLLECTION ROOMS OVER 100 SQUARE FEET	1 HOUR OR PROVIDE AUTOMATIC FIRE-EXTINGUISHING SYSTEM
ROOMS UTILIZING THE ELECTRICAL INSTALLATION STANDARDS FOR "INFORMATION TECHNOLOGY ROOMS" AS PER SECTION 645.1 OF THE NEW YORK CITY ELECTRICAL CODE	AS MAY BE REQUIRED BY THE NEW YORK CITY ELECTRICAL CODE

- where an automatic fire-extinguishing system is provided, it need only be provided in the incidental use room or area.
- multiple dwellings shall also comply with section 65 of the mdl

SEPARATED OCCUPANCIES (BC 508.3.3)

- INDIVIDUAL OCCUPANCIES SHALL BE SEPARATED FROM ADJACENT OCCUPANCIES IN ACCORDANCE WITH TABLE 508.3.3. WHERE THE BUILDING IS EQUIPPED WITH AN APPROVED AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH BC 903.3.1.1, THE FIRE RESISTANCE RATINGS IN TABLE 508.3.3 CAN BE REDUCED BY 1 HOUR, BUT IN NO CASE LESS THAN THAT REQUIRED FOR FLOOR CONSTRUCTION ACCORDING TO THE TYPE OF CONSTRUCTION, OR 1 HOUR, WHICHEVER IS HIGHER. (BC 508.3.3.4)
- REQUIRED SEPARATIONS SHALL BE FIRE BARRIERS CONSTRUCTED IN ACCORDANCE WITH BC 703 OR BC 711. (BC 508.3.3.4.1)

REQUIRED SEPARATION OF OCCUPANCIES (HOURS)^a (TABLE 508.3.3)

USE	B ^b	M ^b	R-1	R-2	R-3	S-1	S-2	U
R-2	2	2	2	-	2	3	2	1

- reductions permitted per section 508.3.3.4

- occupancy separation need not be provided for storage areas serving group b or m if any of the following conditions apply:
 - storage area is less than 10 of the floor area and less than 3000 square feet.
 - storage area is provided with an automatic fire-extinguishing system and is less than 3000 square feet.
 - storage area is less than 1000 square feet.

TYPES OF CONSTRUCTION

CONSTRUCTION CLASSIFICATION (BC 602)

- THE SUBJECT BUILDING IS OF CONSTRUCTION TYPE 1B. SEE TABLE 601 FOR FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS.
- SEE TABLE 602 FOR FIRE RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE

FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (TABLE 601)

BUILDING ELEMENT	CONSTRUCTION TYPE 1B	
		RATING IN HOURS
STRUCTURAL FRAME ^a , INCLUDING COLUMNS, GIRDERS AND TRUSSES		2 ^b
BEARING WALLS ^{c,d} - EXTERIOR		2
BEARING WALLS - INTERIOR		2 ^b
NONBEARING WALLS AND PARTITIONS - EXTERIOR		SEE TABLE 602
NONBEARING WALLS AND PARTITIONS - INTERIOR ^e		0
FLOOR CONSTRUCTION ^f , INCLUDING SUPPORTING BEAMS AND JOISTS		2
ROOF CONSTRUCTION, INCLUDING SUPPORTING BEAMS AND JOISTS		1 ^c

- The structural frame shall be considered to be the columns and the girders, beams, trusses and spandrels having direct connections to the columns and bracing members designed to carry gravity loads. The members of floor and roof panels which have no connection to the columns shall be considered secondary members and not a part of the structural frame.

- Roof supports: Fire resistance ratings of structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

- < refer to the NYC Building Code for the full text of this footnote >

- < refer to the NYC Building Code for the full text of this footnote >

- not less than the fire-resistance rating required by other sections of the Code

- not less than the fire-resistance rating based on the fire separation distance (Table 602)

- see footnote (d) of Table 602

- see Section 711.3 for additional requirements

FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE^{a, d, e} (TABLE 602)

FIRE SEPARATION DISTANCE (FEET)	TYPE OF CONSTRUCTION	OCCUPANCY GROUP F-1, M, S-1	OCCUPANCY GROUP A, B, E, F-2, I, R ^b , S-2, U
< 5 ^c	ALL	2	1
≥ 5 < 10	IA	2	1
	OTHERS	1	1
≥ 10 < 30	IA, IB	1	1
	IIb, VB	0	0
≥ 30	OTHERS	1	1
	ALL	0	0

- Load-bearing exterior walls shall also comply with the fire-resistance rating requirements of Table 601

- Group R-3 and Group U when used as accessory to Group R-3, shall not be required to have a fire-resistance rating where the fire separation distance is 3 feet or more.

- See Section 703.1.1 for party walls

- Inside the fire district, exterior load-bearing walls of Type II buildings shall have a fire-resistance rating not less than prescribed as follows: <5...<2 hours; ≥ 5 < 10...2 hours; ≥ 10 < 30...1 hour; ≥ 30...as per Table 602

- Inside the fire district, exterior nonload-bearing walls of Type II buildings shall have a fire-resistance rating not less than prescribed as follows: <5...as per Table 602; ≥ 5 < 10...as per Table 602; ≥ 10 < 30...1 hour; ≥ 30...as per Table 602

EXTERIOR WALLS (BC 704)

- EXTERIOR WALLS SHALL BE FIRE-RESISTANCE RATED AND HAVE OPENING PROTECTIVES AS REQUIRED BY BC 704. (BC 704.1)
- EXTERIOR WALLS SHALL BE FIRE-RESISTANCE RATED IN ACCORDANCE WITH TABLES 601, 602 AND APPENDIX D WHERE APPLICABLE. (BC 704.5)
- THE FIRE RESISTANCE OF EXTERIOR WALLS WITH A FIRE SEPARATION DISTANCE OF GREATER THAN 5 FEET SHALL BE RATED FOR EXPOSURE TO FIRE FROM THE INSIDE. (BC 704.5)
- THE FIRE RESISTANCE OF EXTERIOR WALLS WITH A FIRE SEPARATION DISTANCE OF 5 FEET OR LESS SHALL BE RATED FOR EXPOSURE TO FIRE FROM BOTH SIDES. (BC 704.5)

FIRE WALLS (BC 705)

- PORCTIONS OF BUILDINGS SEPARATED BY ONE OR MORE FIRE WALLS SHALL BE CONSIDERED SEPARATED BUILDINGS. (BC 705.1)
- THE REQUIRED FIRE RESISTANCE RATING OF A FIRE WALL SHALL NOT BE LESS THAN REQUIRED IN TABLE 705.4 (BC 705.4)

FIRE BARRIERS (BC 706)

- FIRE BARRIERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH BC 706 TO SEPARATE SHAFTS, EXITS, EXIT PASSAGeways, HORIZONTAL EXITS OR INCIDENTAL USE AREAS, DIFFERENT OCCUPANCIES, OR SINGLE OCCUPANCIES INTO SEPARATE FIRE AREAS, OR TO SEPARATE OTHER AREAS WHERE A FIRE BARRIER IS REQUIRED ELSEWHERE IN THE NYC BUILDING CODE OR NYC FIRE CODE
- OPENINGS IN FIRE BARRIER WALLS SHALL BE PROTECTED AS PER BC 715 AND SHALL BE LIMITED TO A MAXIMUM AGGREGATE WIDTH OF 25 PERCENT OF THE LENGTH OF THE WALL AND THE MAXIMUM AREA OF ANY OPENING SHALL NOT EXCEED 120 SQUARE FEET, EXCEPT AS FOLLOWS: (BC 706.7)
 - AREAS ARE NOT LIMITED WHEN THE ADJOINING FIRE AREAS ARE EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1
 - OPENINGS FOR FIRE DOORS SERVING AN EXIT ENCLOSURE SHALL NOT BE LIMITED IN AGGREGATE WIDTH.
 - AREA AND WIDTH LIMITATIONS DO NOT APPLY WHEN THE OPENING PROTECTIVE ASSEMBLY HAS A MINIMUM FIRE-RESISTANCE RATING NOT LESS THAN THE FIRE-RESISTANCE RATING OF THE WALL AND HAS BEEN TESTED IN ACCORDANCE WITH ASTM E 119.
 - OPENINGS IN ATRIUM ENCLOSURES SHALL COMPLY WITH BC 404.5

SUMMARY OF FIRE BARRIER FIRE RESISTANCE RATINGS

AREA	CODE SECTION	FIRE-RESISTANCE RATING (HR)
SHAFTS	BC 707.4	2 HR
ELEVATOR SHAFTS	BC 707.4, CH. 30	2 HR
VERTICAL EXIT ENCLOSURE	BC 1019.1	2 HR
REFUSE CHUTE	707.13.1	2 HR
REFUSE COLLECTION ROOM	707.13.3	2 HR
REFUSE TERMINATION ROOM	707.13.4	3 HR
EXIT PASSAGeway	1020.3	1 HR, UNLESS CONNECTED TO AN EXIT COMPONENT WITH GREATER FIRE RESISTANCE RATING
HORIZONTAL EXIT	1021.20000	2 HR
PUBLIC CORRIDOR	TABLE 1016.1.2	1 HR
INTERIOR CORRIDOR	TABLE 1016.1.1	NO REQUIREMENT WITHIN DWELLING UNIT, 1 HR IF UNSPRINKLERED AND OCCUPANT LOAD > 10
BETWEEN R-2 FIRE AREAS	TABLE 706.3.7	3
INCIDENTAL USE AREAS	TABLE 508.2	VARIES
SEPARATE OCCUPANCIES	TABLE 508.3.3	VARIES

SHAFT ENCLOSURES (BC 707)

- SHAFT ENCLOSURES SHALL HAVE A FIRE RESISTANCE RATING OF NOT LESS THAN TWO HOURS WHERE PENETRATING THREE STORIES OR MORE AND NOT LESS THAN ONE HOUR WHERE PENETRATING FEWER THAN THREE STORIES, BUT NOT LESS THAN THE FLOOR ASSEMBLY PENETRATED NOR MUST THEY EXCEED 2 HOURS. (BC 707.4)
- A SHAFT ENCLOSURE FOR REFUSE OR LAUNDRY CHUTES SHALL EXTEND THROUGH ANY TYPE OF ROOF CONSTRUCTION TO AT LEAST SIX FEET ABOVE THE ROOF. (BC 707.5, EXCEPTION)
- OPENINGS IN A SHAFT ENCLOSURE SHALL BE PROTECTED IN ACCORDANCE WITH BC 715 AS REQUIRED FOR FIRE BARRIERS
- THE DISCHARGE OF LAUNDRY AND REFUSE CHUTES SHALL TERMINATE IN A ROOM ENCLOSED IN CONSTRUCTION WITH A FIRE-RESISTANCE RATING OF NOT LESS THAN 3 HOURS, WITH SELF CLOSING OPENING PROTECTIVES HAVING A RATING OF NOT LESS THAN 1 1/2 HOURS. (BC 707.13.4)
- LAUNDRY AND REFUSE CHUTE SHAFT ENCLOSURES AND TERMINATION ROOMS SHALL INCLUDE AN APPROVED AUTOMATIC FIRE SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH BC 903.2.10.2 (BC 707.13.6)

FIRE PARTITIONS (BC 708)

- INTERIOR CORRIDOR WALLS SHALL BE CONSTRUCTED AS FIRE PARTITIONS IN ACCORDANCE WITH BC 708. (708.1)
- THE FIRE RESISTANCE RATING OF THE WALLS SHALL BE ONE HOUR, EXCEPT AS PERMITTED BY TABLE 1016.1 (BC 708.3)
- FIRE PARTITIONS SHALL EXTEND FROM THE TOP OF THE FLOOR ASSEMBLY BELOW TO THE UNDERSIDE OF THE FLOOR OR ROOF SLAB OR DECK ABOVE OR TO THE FIRE RESISTANCE RATED ASSEMBLY ABOVE AND SHALL BE SECURELY ATTACHED THERETO. (BC 708.4)

SMOKE BARRIERS (BC 709)

- SMOKE BARRIERS SHALL HAVE A ONE HOUR FIRE RESISTANCE RATING (BC 709.3) AND SHALL FORM AN EFFECTIVE MEMBRANE FROM OUTSIDE WALL TO OUTSIDE WALL AND FROM FLOOR SLAB TO FLOOR OR ROOF DECK ABOVE. (BC 709.4)

SMOKE PARTITIONS (BC 710)

- SMOKE PARTITIONS SHALL BE CONSTRUCTED OF NON-COMBUSTIBLE MATERIALS, INCLUDING HEAT STRENGTHENED OR TEMPERED GLAZING WITH SPRINKLER PROTECTION SIX FEET ON CENTER ON EACH SIDE OF THE PARTITION. (BC 710.2)
- SMOKE PARTITIONS NEED NOT HAVE A FIRE RATING UNLESS REQUIRED BY OTHER CODE SECTIONS. (BC 710.3)
- SMOKE PARTITIONS SHALL BE CONTINUOUS (BC 710.4)
- WINDOWS SHALL BE SEALED TO RESIST THE FREE PASSAGE OF SMOKE OR SHALL BE

AUTOMATIC CLOSING UPON DETECTION OF SMOKE. (BC 710.5)

- DOORS SHALL NOT INCLUDE LOUVERS (710.5.1)
- DOORS SHALL BE TESTED IN ACCORDANCE WITH UL 1784 AND THE AIR LEAKAGE RATE OF THE DOOR ASSEMBLY SHALL NOT EXCEED 3.0 CUBIC FEET PER MINUTE PER SQUARE FOOT OR DOOR OPENING AT 0.10 INCH OF WATER FOR BOTH THE AMBIENT TEMPERATURE TEST AND THE TEMPERATURE EXPOSURE TEST. (BC 710.5.2)
- DOORS SHALL BE SELF CLOSING OR AUTOMATIC CLOSING IN ACCORDANCE WITH BC 715.3.7.3 (BC 710.5.3)

HORIZONTAL ASSEMBLIES (BC 711)

- FLOOR AND ROOF ASSEMBLIES REQUIRED TO HAVE A FIRE RESISTANCE RATING SHALL COMPLY WITH BC 711

PENETRATIONS (BC 712)

- ALL THROUGH-PENETRATION AND MEMBRANE-PENETRATION FIRESTOP SYSTEMS SHALL COMPLY WITH THE SPECIAL INSPECTION REQUIREMENTS OF CHAPTER 17 (BC 712.1.1)
- PENETRATIONS SHALL BE INSTALLED AS TESTED IN AN APPROVED FIRE-RESISTANCE-RATED ASSEMBLY. (BC 712.3.1.1)
- STEEL ELECTRICAL BOXES NOT EXCEEDING 16 SQUARE INCHES ARE PERMITTED PROVIDED THAT THE TOTAL AREA OF SUCH OPENINGS DOES NOT EXCEED 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF WALL AREA. BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE HORIZONTALLY SEPARATED BY 24 INCHES, OR FIREBLOCKED, OR PROTECTED BY PUTTY PADS, OR SEPARATED BY CELLULOSE, ROCK WOOL OR MINERAL SLAG INSULATION.

FIRE RESISTANT JOINT SYSTEMS (BC 713)

- JOINTS INSTALLED IN OR BETWEEN FIRE-RESISTANCE RATED WALLS, FLOOR OR FLOOR/CEILING ASSEMBLIES AND ROOFS OR ROOF/CEILING ASSEMBLIES SHALL BE PROTECTED BY AN APPROVED FIRE-RESISTANT JOINT SYSTEM. (BC 713.1)

FIRE-RESISTANCE RATING OF STRUCTURAL MEMBERS (BC 714)

- THE INSTALLATION OF ALL REQUIRED SPRAYED-ON FIRE PROTECTION SHALL BE SUBJECT TO THE SPECIAL INSPECTION REQUIREMENTS OF SECTION 1704.11
- COLUMNS, GIRDERS, TRUSSES, BEAMS, LINTELS OR OTHER STRUCTURAL MEMBERS THAT ARE REQUIRED TO HAVE A FIRE-RESISTANCE RATING AND THAT SUPPORT MORE THAN ONE FLOOR OR A ROOF, OR SUPPORT A LOAD-BEARING WALL OR A NON-LOAD-BEARING WALL MORE THAN ONE STORY HIGH, SHALL BE INDIVIDUALLY PROTECTED ON ALL SIDES FOR THE FULL LENGTH WITH MATERIALS HAVING THE REQUIRED FIRE-RESISTANCE RATING. (BC 714.2.1)
- MEMBERS OVER OPENINGS WIDER THAN 4 FEET IN MASONRY WALLS SHALL BE FIRE PROTECTED AS REQUIRED BY BC 714.2 UNLESS THE FULL LOAD OVER THE OPENING IS RELIEVED BY A MASONRY ARCH, OR IF THE LINTEL ONLY SUPPORTS OUTER FACE MASONRY WHICH IS SECURELY BONDED OR ANCHORED TO BACKING. (BC 714.6)

OPENING PROTECTIVES (BC 715)

- FIRE DOOR AND FIRE SHUTTER ASSEMBLIES SHALL BE INSTALLED IN ACCORDANCE WITH THE PROVISION OF BC 715 AND NFPA 80.
- FIRE DOOR AND FIRE SHUTTER FIRE PROTECTION RATINGS ARE AS LISTED IN TABLE 715.3
- FIRE DOOR ASSEMBLIES LOCATED IN CORRIDOR WALLS OR SMOKE BARRIER WALLS SHALL BE TESTED IN ACCORDANCE WITH NFPA 252 OR UL10C. GLAZING SHALL BE TESTED IN ACCORDANCE WITH NFPA 257. FIRE DOOR ASSEMBLIES SHALL ALSO MEET THE REQUIREMENTS FOR SMOKE- AND DRAFT-CONTROL DOOR ASSEMBLY TESTED IN ACCORDANCE WITH UL 1784. (BC 715.3.3)
- FIRE DOOR ASSEMBLIES SHALL BE LABELED BY AN APPROVED AGENCY AND SHALL COMPLY WITH NFPA 80. (BC 715.3.5)
- FIRE DOORS SHALL BE SELF-CLOSING OR AUTOMATIC- CLOSING AND UNLESS SPECIFICALLY PERMITTED, SHALL BE PROVIDED WITH AN ACTIVE LATCH BOLT. (BC 715.3.7)

FIRE DOOR AND FIRE SHUTTER FIRE PROTECTION RATINGS (TABLE 715.3)

TYPE OF ASSEMBLY	REQUIRED ASSEMBLY RATING (HOURS)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (HOURS)
FIRE WALLS AND FIRE BARRIERS HAVING A REQUIRED FIRE-RESISTANCE RATING GREATER THAN 1 HOUR	4	3
FIRE BARRIERS HAVING A REQUIRED FIRE-RESISTANCE RATING OF 1 HOUR:	2	1 1/2
SHAFT, EXIT ENCLOSURE AND EXIT PASSAGeway WALLS	1 1/2	1 1/2
OTHER FIRE BARRIERS	1	3/4
FIRE PARTITIONS:		
CORRIDOR WALLS	1	3/4
OTHER PARTITIONS	1	3/4
EXTERIOR WALLS	3	1 1/2
	1	3/4

DUCTS AND AIR TRANSFER OPENINGS (BC 716)

- DUCT AND AIR TRANSFER OPENINGS IN FIRE BARRIERS, FIRE WALLS AND FIRE PARTITIONS SHALL BE PROTECTED BY FIRE AND SMOKE DAMPERS AS REQUIRED BY BC 716.

CONCEALED SPACES (BC 717)

- IN COMBUSTIBLE AND NONCOMBUSTIBLE CONSTRUCTION, FIREBLOCKING SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF BC 717.2 TO CUT OFF CONCEALED DRAFT OPENINGS AND SHALL FORM AN EFFECTIVE BARRIER BETWEEN FLOORS. (BC 717.2)
- IN COMBUSTIBLE AND NONCOMBUSTIBLE CONSTRUCTION, DRAFTSTOPPING SHALL BE INSTALLED TO SUBDIVIDE FLOOR/CEILING ASSEMBLIES IN ACCORDANCE WITH THE REQUIREMENTS OF BC 717.3. (BC 717.3)

THERMAL- AND SOUND-INSULATING MATERIALS (BC 719)

- INSULATING MATERIALS USED IN NONCOMBUSTIBLE CONSTRUCTION MUST HAVE A FLAME SPREAD INDEX NOT GREATER THAN 25, A SMOKE DEVELOPED INDEX NOT GREATER THAN 50 AND BE WITHOUT EVIDENCE OF CONTINUED PROGRESSIVE COMBUSTION WHEN TESTED IN ACCORDANCE WITH ASTM E 84. (BC 719.1.1)

PRESCRIPTIVE AND CALCULATED FIRE RESISTANCE (BC 720, BC 721)

- PRESCRIPTIVE FIRE RESISTANCE AND CALCULATED FIRE RESISTANCE OF MATERIAL AND ASSEMBLIES SHALL BE AS LISTED IN BC 720 AND BC 721, RESPECTIVELY.

INTERIOR FINISHES

GENERAL (BC 801)

- FOR BUILDINGS IN FLOOD HAZARD AREAS AS ESTABLISHED IN APPENDIX G, INTERIOR FINISHES, TRIM AND DECORATIVE MATERIALS BELOW THE DESIGN FLOOD ELEVATION SHALL BE FLOOD-DAMAGE-RESISTANT MATERIALS. (BC 801.1.2)
- INTERIOR CEILING AND WALL FINISHES SHALL BE CLASSIFIED IN ACCORDANCE WITH ASTM E 84 AND SHALL BE GROUPED IN ACCORDANCE WITH THEIR FLAME SPREAD INDEX:

INTERIOR WALL AND CEILING FINISHES (BC 803.1)	CLASS A	CLASS B	CLASS C
FLAME SPREAD INDEX	0-25	26-75	76-200

- SMOKE DEVELOPED INDEX SHALL RANGE FROM 0-450 WITH THE FOLLOWING

RESTRICTIONS:

SMOKE DEVELOPED INDEX (BC 803.1.1)	
EXITS, CORRIDORS	25
OCCUPANCY GROUP I	50
ROOMS IN WHICH THE NET FLOOR AREA PER OCCUPANT IS 10 SF OR LESS	100

- WHERE INTERIOR FINISH MATERIALS ARE APPLIED TO FIRE-RESISTANCE RATED CONSTRUCTION, SUCH MATERIALS SHALL EITHER BE APPLIED DIRECTLY OR SHALL BE APPLIED TO FURRING STRIPS NOT EXCEEDING 1.75 INCHES APPLIED DIRECTLY TO SUCH SURFACES AND INTERVENING SPACES BETWEEN SUCH FURRING SHALL BE FIREBLOCKED AT A MAXIMUM OF 8 FEET IN ANY DIRECTION. (BC 803.4.1)
- WHERE FINISHED WALLS OR CEILINGS ARE SET OUT FROM FIRE-RESISTANCE RATED CONSTRUCTION MORE THAN 1.75 INCHES, ONLY CLASS A FINISH MATERIALS SHALL BE USED UNLESS BOTH SIDES OF THE SET OUT CONSTRUCTION ARE PROTECTED WITH AN AUTOMATIC SPRINKLER SYSTEM. (BC 803.4.2)
- INTERIOR WALL AND CEILING FINISH SHALL HAVE A FLAME SPREAD INDEX NOT GREATER THAN THAT SPECIFIED IN TABLE 803.5. (BC 803.5)

INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY^k (TABLE 803.5)

OCC. GROUP	SPRINKLERED		
	VERTICAL EXITS AND EXIT PASSAGeways ^{a, b}	EXIT ACCESS CORRIDORS AND OTHER EXITWAYS	ROOMS AND ENCLOSED SPACES ^c
R-2	B	B	C

- Class C interior finish materials shall be permitted for wainscoting or paneling of not more than 1000 square feet of applied surface area in the grade lobby where applied directly to a noncombustible base or over furring strips applied to a noncombustible base and fireblocked as required by Section 803.4.1

- In vertical exits of buildings less than three stories in height of other than Group I-3, Class B interior finish for non-sprinklered buildings and Class C interior finish for sprinklered buildings shall be permitted.

- Requirements for rooms and enclosed spaces shall be based upon spaces enclosed by girders, trusses, beams, lintels or other structural elements; the enclosing partitions shall extend from the floor to the ceiling. Partitions that do not comply with this shall be considered enclosing spaces and the rooms or spaces on both sides shall be considered one. In determining the applicable requirements for rooms and enclosed spaces, the specific occupancy thereof shall be the governing factor regardless of the group classification of the building or structure.

- ACOUSTICAL CEILING SYSTEMS SHALL COMPLY WITH BC 803.9 (BC 803.9)

INTERIOR FLOOR FINISH (BC 804)

- INTERIOR FLOOR FINISH SHALL BE NOT LESS THAN CLASS II IN OCCUPANCY GROUP R-2 AND SHALL BE CLASSIFIED IN ACCORDANCE WITH NFPA 253. (BC 804.2, BC 805.1)
- INSTALLATION SHALL CONFORM WITH THE REQUIREMENTS OF BC 804.4
- FLOOR FINISHES IN EXITS AND EXIT PASSAGeways OF TYPE I AND TYPE II CONSTRUCTION SHALL BE NON-COMBUSTIBLE.

DECORATIONS AND TRIM (BC 805)

- MATERIAL USED AS INTERIOR TRIM SHALL HAVE A MINIMUM CLASS C FLAME SPREAD, COMBUSTIBLE TRIM, EXCLUDING HANDRAILS AND GUARDRAILS, SHALL NOT EXCEED 10 PERCENT OF THE AGGREGATE WALL OR CEILING AREA IN WHICH IT IS LOCATED. (BC 805.3)

FIRE PROTECTION SYSTEMS

GENERAL (BC 901)

- FIRE PROTECTION SYSTEMS SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NYC BUILDING CODE AND THE NYC FIRE CODE. (BC 901.5)
- IT SHALL BE UNLAWFUL TO OCCUPY PORTIONS OF A STRUCTURE UNTIL THE REQUIRED FIRE PROTECTION SYSTEMS WITHIN THAT PORTION OF THE STRUCTURE HAVE BEEN TESTED AND APPROVED. (BC 901.5)

AUTOMATIC SPRINKLER SYSTEMS (BC 903)

- AN AUTOMATIC SPRINKLER SYSTEM SHALL BE INSTALLED IN GROUP R FIRE AREAS AND BUILDINGS WITH A MAIN USE OR DOMINANT OCCUPANCY OF GROUP R (BC 903.2.7)
- AN AUTOMATIC SPRINKLER SYSTEM SHALL BE INSTALLED AT THE TOP OF RUBBISH AND LINEN CHUTES, IN CHUTE ACCESS ROOMS, AND IN THEIR TERMINAL ROOMS. CHUTES EXTENDING THROUGH THREE OR MORE FLOORS SHALL HAVE ADDITIONAL SPRINKLER HEADS AT ALTERNATING FLOORS. CHUTE SPRINKLERS SHALL BE ACCESSIBLE FOR SERVICING. (BC 903.2.10.2)
- REFUSE COLLECTION AND DISPOSAL SORTING AREAS SHALL HAVE SPRINKLER PROTECTION. (BC 903.2.10.5)
- AUTOMATIC SPRINKLER SYSTEMS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH BC 903.3.1.1 (NFPA 13 SPRINKLER SYSTEMS), BC 903.3.1.2 (NFPA 13R SPRINKLER SYSTEMS) OR 903.3.1.3 (NFPA 13D SPRINKLER SYSTEMS), AS REQUIRED BY THE NYC BUILDING CODE. (BC 903.3)

STANDPIPE SYSTEMS (BC 905)

- STANDPIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH BC 905.

PORTABLE FIRE EXTINGUISHERS (BC 906)

- PORTABLE FIRE EXTINGUISHERS SHALL BE PROVIDED IN OCCUPANCIES AND LOCATIONS AS REQUIRED BY THE NEW YORK CITY FIRE CODE. (BC 906.1)

FIRE ALARM AND DETECTION SYSTEMS (BC 907)

- AN APPROVED MANUAL, AUTOMATIC OR MANUAL AND AUTOMATIC FIRE ALARM SYSTEM SHALL BE PROVIDED IN ACCORDANCE WITH THE PROVISIONS OF THE NYC BUILDING CODE, THE NYC MECHANICAL CODE AND NFPA 72. (BC 907.1)
- IN OCCUPANCIES WHERE AUTOMATIC FIRE ALARM SYSTEMS ARE REQUIRED, SELECTIVE COVERAGE SMOKE DETECTORS SHALL BE PROVIDED AT MECHANICAL, ELECTRICAL AND SIMILAR ROOMS; ELEVATOR MACHINE ROOMS; ELEVATOR LOBBIES; AND WITHIN AIR DISTRIBUTION SYSTEMS IN ACCORDANCE WITH SECTION 606 OF THE NYC MECHANICAL CODE. (BC 907.2)
- GROUP R-2 FIRE ALARM AND DETECTION SYSTEMS REQUIREMENTS:
 - AN AUTOMATIC FIRE ALARM SYSTEM WITHOUT ALARM NOTIFICATION APPLIANCES IS REQUIRED AT R-2 OCCUPANCIES WITH DWELLING UNITS 3 OR MORE STORIES ABOVE THE LOWEST LEVEL OF EXIT DISCHARGE, OR 1 OR MORE LEVELS BELOW THE LEVEL OF EXIT DISCHARGE, OR WHEN THE BUILDING CONTAINS MORE THAN 16 DWELLING UNITS (BC 907.2.9)
 - SMOKE DETECTORS SHALL BE PROVIDED AT MECHANICAL, ELECTRICAL AND SIMILAR ROOMS, WITH AN AREA GREATER THAN 75 SF; WITHIN AIR DISTRIBUTION SYSTEMS IN ACCORDANCE WITH SECTION 606 OF THE NYC MECHANICAL CODE; IN ELEVATOR MACHINE ROOMS AND E

INTERIOR ENVIRONMENT

VENTILATION (BC 1203)

- ALL HABITABLE AND/OR OCCUPIABLE SPACES SHALL BE PROVIDED WITH NATURAL OR MECHANICAL VENTILATION IN ACCORDANCE WITH BC 1203.4

TEMPERATURE AND HUMIDITY CONTROL (BC 1204)

- INTERIOR SPACES INTENDED FOR HUMAN OCCUPANCY SHALL BE PROVIDED WITH ACTIVE OR PASSIVE SPACE-HEATING, AIR CONDITIONING AND FREEZE PROTECTION SYSTEMS CAPABLE OF MAINTAINING THE LEVELS PRESCRIBED BY THIS CODE SECTION (BC 1204)

LIGHTING

- EVERY ROOM OR SPACE, OTHER THAN STORAGE AREAS LESS THAN 40 SQUARE FEET IN AREA, SHALL BE PROVIDED WITH ARTIFICIAL LIGHTING IN ACCORDANCE WITH BC 1205.3 (BC 1205.1)
- EVERY HABITABLE ROOM AND SPACE SHALL BE PROVIDED WITH NATURAL LIGHT BY MEANS OF EXTERIOR GLAZED OPENINGS IN ACCORDANCE WITH BC 1205.2 (BC 1205.1)
- ARTIFICIAL LIGHTING SHALL BE ADEQUATE TO PROVIDE AN AVERAGE ILLUMINATION OF 10 FOOT CANDLES OVER THE AREA OF THE ROOM AT A HEIGHT OF 30 INCHES ABOVE THE FLOOR LEVEL (BC 1205.3.2)
- STAIRS WITHIN DWELLING UNITS AND EXTERIOR STAIRS SERVING A DWELLING UNIT SHALL HAVE A MINIMUM TREAD ILLUMINATION OF 1 FOOT-CANDLE (BC 1205.3.3)
- MEANS OF EGRESS SHALL BE ILLUMINATED AS REQUIRED IN BC 1006.1 (BC 1205.3.4)

YARDS AND COURTS (BC 1206)

- ALL COURTS SHALL BE PROPERLY GRADED AND DRAINED IN COMPLIANCE WITH THE NYC PLUMBING CODE, THE NYC HOUSING MAINTENANCE CODE AND SECTION 77 OF THE NEW YORK STATE MULTIPLE DWELLING LAW (BC 1206.3)
- IN GROUP R-2 OCCUPANCY, ALL YARDS AND COURTS SHALL BE ARTIFICIALLY ILLUMINATED TO NOT LESS THAN 1 FOOT-CANDLE MEASURED 30 INCHES ABOVE THE LOWEST LEVEL OF THE COURT OR YARD.

SOUND TRANSMISSION (BC 1207)

- WALLS, PARTITIONS, AND FLOOR/CEILING ASSEMBLIES SEPARATING APARTMENTS FROM EACH OTHER OR FROM PUBLIC OR SERVICE AREAS ARE TO HAVE MINIMUM S.T.C. RATING OF 50 FOR AIRBORNE NOISE IN ACCORDANCE WITH ASTM E 90 OR NOT LESS THAN 45 IF FIELD TESTED IN ACCORDANCE WITH ASTM E 336. (BC 1207.2)
- APARTMENT ENTRANCE DOOR ASSEMBLIES SHALL HAVE A MINIMUM 35 S.T.C. RATING IN ACCORDANCE WITH ASTM E 1408 (BC 1207.2)
- PENETRATIONS OR OPENINGS IN CONSTRUCTION ASSEMBLIES FOR PIPING, ELECTRICAL DEVICES, RECESSED CABINETS, BATHTUBS, SOFFITS, HVAC DUCTS, ETC SHALL BE SEALED, LINED, INSULATED OR OTHERWISE TREATED TO MAINTAIN THE REQUIRED RATINGS. (BC 1207.2)
- MAXIMUM SOUND POWER LEVEL OUTPUTS FOR MACHINE ROOMS ADJACENT TO DWELLING UNITS SHALL NOT EXCEED THE LIMITS LISTED IN TABLE 1207.2.1 (BC 1207.2.1)
- FLOOR AND CEILING CONSTRUCTION SEPARATING DWELLING UNITS FROM EACH OTHER OR FROM PUBLIC HALLS OR MECHANICAL EQUIPMENT SHALL HAVE MINIMUM IMPACT INSULATION CLASS (IIC) OF 50 IN ACCORDANCE WITH ASTM E 492 OR NOT LESS THAN 45 IF FIELD TESTED IN ACCORDANCE WITH ASTM E 1007 IN COMPLETED CONSTRUCTION (BC 1207.3)
- REFUSE CHUTES SHALL BE RESILIENTLY SUPPORTED AT EACH STRUCTURAL SUPPORT LOCATION AND SHALL BE INSTALLED PLUMB (BC 1207.3.1)

INTERIOR SPACE DIMENSIONS (BC 1208)

- HABITABLE SPACES OTHER THAN A KITCHEN SHALL NOT BE LESS THAN 8 FEET IN ANY PLAN DIMENSION, WITH THE FOLLOWING EXCEPTIONS (BC 1208.1)
 - A ROOM WITH CODE COMPLIANT ACCESS TO LIGHT AND AIR IN ADDITION TO AN OPENING NOT LESS THAN 60 SQUARE FEET TO AN ADJOINING ROOM SHALL NOT BE LESS THAN ANY DIMENSION
 - A HABITABLE DINING SPACE WITH CODE COMPLIANT ACCESS TO LIGHT AND AIR MAY BE LESS THAN 8 FEET IN PLAN DIMENSION.
 - ONE-HALF THE NUMBER OF BEDROOMS IN A DWELLING UNIT CONTAINING THREE OR MORE BEDROOMS SHALL NOT BE LESS THAN 7 FEET IN ANY PLAN DIMENSION.
- HABITABLE ROOMS AND SPACES SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 8 FEET. (BC 1208.2)
- OCCUPIABLE SPACES AND CORRIDORS SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 7 FEET 6 INCHES. (BC 1208.2)
- BATHROOMS, TOILET ROOMS, KITCHENETTES, STORAGE AND LAUNDRY ROOMS SHALL BE PERMITTED TO HAVE A CEILING HEIGHT OF NOT LESS THAN 7 FEET. (BC 1208.2)
- EVERY HABITABLE ROOM OR SPACE SHALL HAVE NOT LESS THAN 80 SQUARE FEET IN NET FLOOR AREA, WITH THE FOLLOWING EXCEPTIONS (BC 1208.3.1)
 - A ROOM WITH CODE COMPLIANT LIGHT AND AIR AND IN ADDITION HAS AN OPENING NOT LESS THAN 60 SQUARE FEET TO AN ADJOINING ROOM SHALL HAVE NOT LESS THAN 70 SQUARE FEET OF NET FLOOR AREA.
 - A HABITABLE DINING SPACE AS DEFINED BY THE NYC HOUSING MAINTENANCE CODE WITH CODE COMPLIANT LIGHT AND AIR MAY HAVE LESS THAN 80 SQUARE FEET OF NET FLOOR AREA.
- IN A DWELLING UNIT, AT LEAST ONE HABITABLE ROOM SHALL HAVE NOT LESS THAN 150 SQUARE FEET OF NET FLOOR AREA. (BC 1208.3.2)

ACCESS TO UNOCCUPIED SPACES (BC 1209)

- CRAWL SPACES SHALL HAVE AT LEAST ONE ACCESS OPENING NOT LESS THAN 18 INCHES BY 24 INCHES AND SHALL HAVE A CLEAR HEIGHT OF 18 INCHES. (BC 1209.1)
- ATTIC SPACES HAVING A CLEAR HEIGHT OVER 30 INCHES SHALL HAVE AT LEAST ONE ACCESS OPENING NOT LESS THAN 20 INCHES BY 30 INCHES. (BC 1209.2)
- ACCESS TO MECHANICAL APPLIANCES SHALL BE AS PER THE NYC MECHANICAL CODE. (BC 1209.3)

SURROUNDING MATERIALS (BC 1210)

- TOILET AND BATHROOM FLOORS SHALL HAVE A SMOOTH, HARD, NONABSORBENT SURFACE THAT EXTENDS UPWARD ONTO THE WALLS AT LEAST 6 INCHES (BC 1210.1)
- EXCEPT IN DWELLING UNITS OR IN PRIVATE TOILET ROOMS WITH NO MORE THAN ONE WATER CLOSET, WALLS WITHIN 2 FEET OF URINALS AND WATER CLOSETS SHALL HAVE A SMOOTH, HARD, NONABSORBENT SURFACE, TO A HEIGHT OF 4 FEET ABOVE THE FLOOR. THE MATERIALS IN SUCH WALLS SHALL BE OF A TYPE THAT IS NOT ADVERSELY AFFECTED BY MOISTURE. ALL ACCESSORIES SECURED TO SUCH WALLS SHALL BE SEALED TO PREVENT THE INTRUSION OF MOISTURE INTO THE WALL (BC 1210.2)
- SHOWER COMPARTMENTS AND WALLS ABOVE BATHTUBS WITH SHOWER HEADS SHALL BE FINISHED WITH A SMOOTH, NONABSORBENT SURFACE TO A HEIGHT OF NOT LESS THAN 70 INCHES ABOVE THE DRAIN INLET. (BC 1210.3)
- BUILT-IN TUBS WITH SHOWERS SHALL HAVE WATERPROOF JOINTS BETWEEN THE TUB AND THE ADJACENT WALL. (BC 1210.4)
- NO TOILET ROOM OR BATHROOM SHALL OPEN ONTO ANY KITCHEN OR KITCHENETTE (BC 1210.5)

KITCHENS AND KITCHENETTES (BC 1211)

- EXCEPT AT ENTRANCES THERETO, EVERY KITCHENETTE IN A MULTIPLE DWELLING SHALL BE SURROUNDED BY PARTITIONS EXTENDING FROM FLOOR TO CEILING AND OR BY A SOFFIT DROPPED 1 FOOT FROM THE CEILING.

RODENT PROOFING (BC 1212)

- RODENT PROOFING SHALL BE IN ACCORDANCE WITH APPENDIX F WALLS AND PORTIONS THEREOF WITHIN 2 FEET OF THE GROUND, FLOORS ON GRADE, EXTERIOR DOORS, WINDOWS AND OTHER OPENINGS SHALL COMPLY WITH THE REQUIREMENTS OF APPENDIX F, BC F102.1 THROUGH BC F102.5

REFUSE AND RECYCLABLE STORAGE (BC 1213)

- WHERE A ROOM IS PROVIDED FOR STORAGE OF REFUSE AND RECYCLABLES IN A BUILDING, SUCH ROOM SHALL BE COMPLETELY ENCLOSED BY CONSTRUCTION THAT HAS A FIRE RESISTANCE RATING OF NOT LESS THAN 2 HOURS, WITH SELF CLOSING OPENING PROTECTIVES WITH A 1 1/2 HOUR FIRE RESISTANCE RATING. THE LOCATION OF THE STORAGE ROOM SHALL BE IDENTIFIED ON THE CONSTRUCTION DOCUMENTS (BC 1213.1)
- R-2 OCCUPANCIES FOUR OR MORE STORIES IN HEIGHT WITH 12 OR MORE

- DWELLING UNITS SHALL INCLUDE A REFUSE COMPACTING SYSTEM IN A ROOM CONSTRUCTED IN ACCORDANCE WITH BC 707.13.4, INCLUDING SLOPED CONCRETE FLOORS WITH A DRAIN AND HOSE BIBB (BC 1213.2)
- A MULTIPLE DWELLING THAT IS FIVE OR MORE STORIES IN HEIGHT AND THAT CONTAINS MORE THAN 12 DWELLING UNITS SHALL BE PROVIDED WITH A REFUSE CHUTE, REFUSE CHUTE ACCESS ROOMS AND A REFUSE CHUTE TERMINATION ROOM CONSTRUCTED IN ACCORDANCE WITH BC 707.13 (BC 1213.3)

ENERGY EFFICIENCY

GENERAL (BC 1301)

- BUILDINGS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE. (BC 1301)

LOCAL LAW 1 OF 2011

- THE NEW YORK CITY AMENDMENTS TO THE 2010 ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE SHALL GOVERN THE DESIGN AND CONSTRUCTION OF BUILDINGS IN NEW YORK CITY.

- SEE SHEET EN-001 FOR ENERGY ANALYSIS OF SUBJECT BUILDING.

EXTERIOR WALLS

GENERAL (BC 1401)

- THE PROVISIONS OF CHAPTER 14 OF THE NYC BUILDING CODE SHALL ESTABLISH THE MINIMUM REQUIREMENTS FOR EXTERIOR WALLS, EXTERIOR WALL COVERINGS, OPENINGS, WINDOWS AND DOORS AND OTHER EXTERIOR APPENDAGES. (BC 1401.1)

PERFORMANCE REQUIREMENTS (BC 1403)

- EXTERIOR WALLS SHALL PROVIDE THE BUILDING WITH A WEATHER RESISTANT ENVELOPE THAT PREVENTS ACCUMULATION OF WATER WITHIN THE WALL ASSEMBLY AND A MEANS FOR DRAINING WATER THAT ENTERS THE ASSEMBLY, UNLESS WATER PENETRATION IS DETERMINED TO NOT BE DETRIMENTAL TO BUILDING PERFORMANCE (BC 1403.2)
- AN APPROVED VAPOR RETARDER SHALL BE PROVIDED EXCEPT WHERE OTHER APPROVED MEANS TO AVOID CONDENSATION AND LEAKAGE OF MOISTURE ARE PROVIDED, OR IN PLAIN OR REINFORCED CONCRETE OR MASONRY EXTERIOR WALLS DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH CHAPTERS 19 AND 21, AS APPLICABLE. (BC 1403.3)

MATERIALS (BC 1404)

- MATERIALS USED IN EXTERIOR WALLS SHALL COMPLY WITH PROVISIONS OF BC 1404 (BC 1404)

INSTALLATION OF WALL COVERINGS (BC 1405)

- EXTERIOR WALL COVERINGS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF BC 1405. INSTALLATIONS OF WALL COVERINGS SHALL COMPLY WITH THE SPECIAL INSPECTION REQUIREMENTS OF CHAPTER 17 OF THE NYC BUILDING CODE. (BC 1405)

COMBUSTIBLE MATERIALS ON THE EXTERIOR SIDE OF EXTERIOR WALLS (BC 1406)

- IN BUILDINGS OF TYPE I, II, III AND IV CONSTRUCTION, EXTERIOR WALL COVERINGS SHALL BE PERMITTED TO BE CONSTRUCTED OF COMBUSTIBLE MATERIALS IN ACCORDANCE WITH BC 1406.2.1 (BC 1406.2.2)
- COMBUSTIBLE EXTERIOR WALL COVERINGS SHALL NOT EXCEED 10 PERCENT OF AN EXTERIOR WALL SURFACE AREA ON ANY GIVEN STORY NOR EXCEED 40 FEET IN HEIGHT ABOVE GRADE PLANE AND SHALL NOT BE PERMITTED ON AN EXTERIOR WALL WITH LESS THAN 5 FEET FIRE SEPARATION DISTANCE. (BC 1406.2.2)
- WHERE COMBUSTIBLE EXTERIOR WALL COVERING IS LOCATED ALONG THE TOP OF EXTERIOR WALLS, SUCH TRIM SHALL BE COMPLETELY BACKED UP BY THE EXTERIOR WALL AND SHALL NOT EXTEND OVER OR ABOVE THE TOP OF THE EXTERIOR WALL (BC 1406.2.3)
- COMBUSTIBLE EXTERIOR WALL COVERINGS SHALL NOT BE FURRED MORE THAN 1.625 INCHES FROM THE WALL AND THE FURRED AREA WILL BE FIRELOCKED SO THAT NO CAVITY SPACE EXCEEDS 100 SQUARE FEET.

METAL COMPOSITE MATERIALS (MCM) (BC 1407)

- THE MATERIALS, CONSTRUCTION AND QUALITY OF METAL COMPOSITE MATERIALS ARE GOVERNED BY THE PROVISIONS OF BC 1407. (BC 1407.1)

ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

GENERAL (BC 1501)

- THE PROVISIONS OF CHAPTER 15 OF THE NYC BUILDING CODE SHALL GOVERN THE DESIGN, MATERIALS, CONSTRUCTION AND QUALITY OF ROOF ASSEMBLIES AND ROOFTOP STRUCTURES. (BC 1501.1)
- ROOF DECKS SHALL BE COVERED WITH APPROVED ROOF COVERINGS INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE NYC BUILDING CODE AND THE MANUFACTURERS INSTRUCTIONS. (BC 1503.1)
- FLASHING SHALL BE INSTALLED IN SUCH A MANNER SO AS TO PREVENT MOISTURE ENTERING THE WALL AND ROOF. (BC 1503.2)
- METAL FLASHING SHALL BE MINIMUM 26 GAUGE GALVANIZED SHEET. (BC 1503.2.1)
- PARAPET WALLS SHALL BE PROPERLY COPED WITH NONCOMBUSTIBLE, WEATHERPROOF MATERIALS OF A WIDTH NO LESS THAN THE THICKNESS OF THE PARAPET WALL (BC 1503.3)
- DESIGN AND INSTALLATION OF ROOF DRAINAGE SYSTEMS SHALL COMPLY WITH THE NYC PLUMBING CODE. (BC 1503.4)

PERFORMANCE REQUIREMENTS (BC 1504)

- ROOF DECKS AND ROOF COVERINGS SHALL BE DESIGNED FOR WIND LOADS IN ACCORDANCE WITH CHAPTER 16 AND BC 1504.2, BC 1504.3 AND BC 1504.4 (BC 1504.1)
- ROOF COVERINGS ON ROOFS OR SETBACKS WITH SLOPE LESS THAN 3 UNITS VERTICAL IN 12 UNITS HORIZONTAL SHALL BE WHITE IN COLOR OR ENERGOSTAR RATED AS HIGHLY REFLECTIVE FOR AT LEAST 75 PERCENT OF THE AREA OF ROOF, WITH THE FOLLOWING EXCEPTIONS (BC 1504.8)
 - TERRACES ON SETBACK COMPRISING LESS THAN 25 PERCENT OF THE AREA OF THE LARGEST FLOOR PLATE OF THE BUILDING
 - GREEN ROOFS IN COMPLIANCE WITH BC 1507.16 SHALL BE PERMITTED TO COMPRISE ALL OR PART OF THE 75 PERCENT REQUIRED COVERAGE
 - ROOFS USED AS OUTDOOR RECREATION SPACE MAY BE COVERED WITH A PROTECTIVE SURFACE WITH AN ALBEDO OF 30 PERCENT OR GREATER

FIRE CLASSIFICATION (BC 1505)

- ROOF ASSEMBLIES SHALL BE DIVIDED INTO CLASS A, B OR C BASED ON TESTING IN ACCORDANCE WITH ASTM E 108 OR UL 790. THE MINIMUM ROOF COVERINGS INSTALLED ON BUILDINGS SHALL COMPLY WITH TABLE 1505.1 (BC 1505.1)

REQUIREMENTS FOR ROOF COVERINGS (BC 1507)

- ROOF COVERINGS SHALL BE APPLIED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF BC 1507 AND THE MANUFACTURERS INSTALLATION INSTRUCTIONS (1507.1)

ROOF INSULATION (BC 1508)

- THE USE OF ABOVE-DECK THERMAL INSULATION SHALL BE PERMITTED PROVIDED SUCH INSULATION IS COVERED WITH AN APPROVED ROOF COVERING AND PASSES THE TESTS OF FM 4450 OR UL 1256 WHEN TESTED AS AN ASSEMBLY. (BC 1508.1)

ROOFTOP STRUCTURES (BC 1509)

- WHEN THE TOTAL AGGREGATE AREA OF ALL ROOFTOP STRUCTURES DOES NOT EXCEED 33 PERCENT OF THE AREA OF THE ROOF OF THE BUILDING UPON WHICH THEY ARE ERRECTED, THE FOLLOWING SHALL APPLY: (BC 1509.2.1)
 - BULKHEADS ON TYPE I AND TYPE II BUILDINGS WITH A FIRE SEPARATION DISTANCE BETWEEN 5 FEET AND 20 FEET SHALL BE OF AT LEAST 1-HOUR FIRE-RESISTANCE-RATED NONCOMBUSTIBLE CONSTRUCTION.
 - BULKHEADS ON TYPE I AND TYPE II BUILDINGS WITH A FIRE SEPARATION DISTANCE GREATER THAN 20 FEET SHALL BE OF NONCOMBUSTIBLE CONSTRUCTION.

- UNPROTECTED NONCOMBUSTIBLE ENCLOSURES HOUSING ONLY MECHANICAL EQUIPMENT WITH A MINIMUM FIRE SEPARATION DISTANCE OF 20 FEET SHALL BE PERMITTED.

- PENTHOUSE WALLS SHALL COMPLY WITH TABLES 601 AND 602. PENTHOUSE ROOFS SHALL COMPLY WITH TABLE 601 AND CHAPTER 15. (BC 1509.2.2)
- TANKS HAVING A CAPACITY OF MORE THAN 500 GALLONS SHALL HAVE SUPPORTS WITH A FIRE RESISTANCE RATING AS REQUIRED FOR TYPE II CONSTRUCTION. (BC 1509.3)
- COOLING TOWERS EXCEEDING 250 SQUARE FEET IN AREA OR 15 FEET IN HEIGHT ON BUILDINGS MORE THAN 50 FEET HIGH SHALL BE OF NONCOMBUSTIBLE CONSTRUCTION, EXCEPT THAT FILLING AND DRIFT ELIMINATORS MAY BE COMBUSTIBLE IF THE TOWERS ARE PROVIDED WITH AUTOMATIC SPRINKLER PROTECTION. (BC 1509.4)
- BUILDINGS GREATER THAN 22 FEET IN HEIGHT WITH ROOF SLOPES LESS THAN 2.4:12 SHALL BE PROVIDED WITH A PARAPET OR RAILING NOT LESS THAN 42 INCHES IN HEIGHT. RAILINGS OR FENCES SHALL BE NONCOMBUSTIBLE AND MAY BE LOCATED UP TO 6 FEET INWARD OF THE EXTERIOR WALL. RAILINGS SHALL BE DESIGNED IN ACCORDANCE WITH BC 1012 AND BC 1607.7 (BC 1509.8)

STRUCTURAL DESIGN

GENERAL (BC 1601)

- THE PROVISIONS OF CHAPTER 16 OF THE NYC BUILDING CODE SHALL GOVERN THE STRUCTURAL DESIGN OF BUILDINGS, STRUCTURES AND PORTIONS THEREOF REGULATED BY THE NYC BUILDING CODE. (BC 1601.1)
- THE BUILDING, STRUCTURES AND PARTS THEREOF ARE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH STRENGTH DESIGN, LOAD AND RESISTANCE FACTOR DESIGN, ALLOWABLE STRESS DESIGN, EMPIRICAL DESIGN OR CONVENTIONAL CONSTRUCTION METHODS, AS REQUIRED BY THE 2008 EDITION OF THE NEW YORK CITY BUILDING CODE.

- SEE STRUCTURAL DRAWINGS FOR FURTHER INFORMATION ON THE CODE REQUIREMENTS PERTAINING TO STRUCTURAL DESIGN

STRUCTURAL TESTS AND SPECIAL INSPECTIONS

GENERAL (BC 1701)

- THE PROVISIONS OF CHAPTER 17 OF THE NYC BUILDING CODE SHALL GOVERN THE INSPECTION OF QUALITY, WORKMANSHIP AND REQUIREMENTS FOR CONSTRUCTION. MATERIALS, INSPECTION AND TESTING SHALL CONFORM TO THE APPLICABLE STANDARDS LISTED IN THE NYC BUILDING CODE OR IN THE RULES OF THE DEPARTMENT. (BC 1701.1)

ELECTRICAL

GENERAL (BC 2701)

- THE PROVISIONS OF CHAPTER 27 OF THE NYC BUILDING CODE SHALL GOVERN THE ELECTRICAL COMPONENTS, EQUIPMENT AND SYSTEMS USED IN BUILDINGS AND STRUCTURES COVERED BY THE NYC BUILDING CODE. ELECTRICAL COMPONENTS, EQUIPMENT AND SYSTEMS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THE NYC ELECTRICAL CODE. (BC 2701.1)

EMERGENCY POWER SYSTEMS (BC 2702.1)

- EMERGENCY POWER SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE NYC ELECTRICAL CODE, NFPA 110 AND NFPA 111 AND SHALL HAVE AN ON-SITE FUEL SUPPLY SUFFICIENT FOR 6-HOUR FULL-DEMAND OPERATION, EXCEPT FOR R-2 OCCUPANCIES AND VOLUNTARY INSTALLED SYSTEMS, WHICH MAY BE FUELED BY NATURAL GAS FROM THE PUBLIC UTILITY (BC 2702.1)
- EMERGENCY POWER SYSTEMS SHALL BE PROVIDED WHERE REQUIRED BY BC 2702.2, INCLUDING:
 - SMOKE CONTROL SYSTEMS IN ACCORDANCE WITH BC 909.11
 - EXITS SIGNS IN ACCORDANCE WITH BC 1011.5.3
 - MEANS OF EGRESS ILLUMINATION IN ACCORDANCE WITH BC 1006.3
 - ELEVATORS THAT ARE PART OF THE ACCESSIBLE MEANS OF EGRESS IN ACCORDANCE WITH BC 1007.4
 - HORIZONTAL SLIDING DOORS IN ACCORDANCE WITH BC 1008.1.3.3
 - HIGH RISE BUILDINGS IN ACCORDANCE WITH BC 403.11
 - ELEVATORS PROVIDED TO ACCOMMODATE AMBULANCE STRETCHERS PURSUANT TO BC 3002.4, SHALL BE PROVIDED AS SET FORTH IN BC 3003.1
 - SMOKEPROOF ENCLOSURES AS REQUIRED BY BC 909.20 AND PRESSURIZED ELEVATOR SHAFTS PROVIDED IN ACCORDANCE WITH ITEM 5 OF BC 403.9.1.1
- GROUP R-1 OCCUPANCIES SHALL HAVE AN EMERGENCY POWER SYSTEM FOR THE SYSTEMS LISTED IN BC 2702.2.20.1, WHEN SUCH SYSTEMS ARE REQUIRED BY OTHER SECTIONS OF THE NYC BUILDING CODE. (BC 2702.2.20)

MECHANICAL SYSTEMS

GENERAL (BC 2801)

- MECHANICAL APPLIANCES, EQUIPMENT AND SYSTEMS SHALL BE CONSTRUCTED, INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE NYC MECHANICAL CODE AND THE NYC FUEL GAS CODE. MASONRY CHIMNEYS, FIREPLACES AND BARBEQUES SHALL COMPLY WITH THE NYC MECHANICAL CODE AND CHAPTER 21 OF THE NYC BUILDING CODE. (BC 2801)

PLUMBING SYSTEMS

GENERAL (BC 2901)

- THE NEW YORK CITY PLUMBING CODE SHALL GOVERN THE ERECTION, INSTALLATION, ALTERATION, REPAIRS, RELOCATION, REPLACEMENT, ADDITION TO, USE OR MAINTENANCE OF PLUMBING EQUIPMENT AND SYSTEMS. PLUMBING SYSTEMS AND EQUIPMENT SHALL BE CONSTRUCTED, INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE NYC PLUMBING CODE. (BC 2901.1)

ELEVATORS AND CONVEYING EQUIPMENT

GENERAL (BC 3001)

- ELEVATORS AND CONVEYING EQUIPMENT SHALL BE DESIGNED, CONSTRUCTED, INSTALLED, ALTERED, MAINTAINED, INSPECTED, TESTED AND OPERATED IN ACCORDANCE WITH THE PROVISION OF CHAPTER 30 OF THE NYC BUILDING CODE. (BC 3001.1)

HOISTWAY ENCLOSURES (BC 3002)

- IN BUILDINGS FIVE STORIES OR MORE IN HEIGHT, AT LEAST ONE ELEVATOR WITH EMERGENCY BACK UP POWER SHALL BE PROVIDED FOR FIRE DEPARTMENT EMERGENCY ACCESS TO ALL FLOORS. SUCH ELEVATOR SHALL ACCOMMODATE A 24 INCH BY 76 INCH AMBULANCE STRETCHER IN THE HORIZONTAL OPEN POSITION. (BC 3002.4)

HOISTWAY VENTING (BC 3004)

- ELEVATOR HOISTWAYS SHALL EITHER BE VENTED IN ACCORDANCE WITH BC 3004.5.1, MECHANICALLY VENTED IN ACCORDANCE WITH BC 3004.6.2, PRESURRIZED IN ACCORDANCE WITH BC 3004.6.3 OR UTILIZE SOME OTHER APPROVED MEANS TO PREVENT THE ACCUMULATION OF SMOKE AND HOT GASES IN CASE OF FIRE. (BC 3004.6)

SIGNAGE REQUIREMENTS

1007.6.5 IDENTIFICATION.

EACH DOOR PROVIDING ACCESS TO AN AREA OF RESCUE ASSISTANCE FROM AN ADJACENT FLOOR AREA SHALL BE IDENTIFIED BY A SIGN COMPLYING WITH ICC A117.1, AND INCLUDING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY, STATING:

"AREA OF RESCUE ASSISTANCE"

THE AREA OF RESCUE ASSISTANCE SIGN SHALL BE ILLUMINATED IN ACCORDANCE WITH SECTION 1011.2. ADDITIONALLY, TACTILE SIGNAGE COMPLYING WITH ICC A117.1 SHALL BE LOCATED AT EACH DOOR TO AN AREA OF RESCUE ASSISTANCE.

1019.1.7 STAIRWAY FLOOR NUMBER AND IDENTIFICATION SIGNS.

A SIGN SHALL BE PROVIDED AT EACH FLOOR LANDING IN INTERIOR VERTICAL EXIT ENCLOSURES CONNECTING MORE THAN THREE STORIES DESIGNATING THE FLOOR LEVEL, THE TERMINUS OF THE TOP AND BOTTOM OF THE STAIR ENCLOSURE AND THE IDENTIFICATION OF THE STAIR. THE SIGNAGE SHALL ALSO STATE THE STORY OF, AND THE DIRECTION TO THE EXIT DISCHARGE AND THE AVAILABILITY OF ROOF ACCESS FROM THE STAIRWAY FOR THE FIRE DEPARTMENT. EACH STAIR SHALL BE IDENTIFIED BY AN ALPHABETIC LETTER. STAIRWAY IDENTIFICATION SIGNS SHALL BE PROVIDED ON BOTH SIDES OF EACH STAIR DOOR. THE SIGNS SHALL BE LOCATED 5 FEET (1524 MM) ABOVE THE FLOOR LANDING IN A POSITION WHICH IS READILY VISIBLE WHEN THE DOORS ARE IN THE OPEN AND CLOSED POSITIONS.

1026.4 DOOR SIGNS.

FOR THE FOLLOWING BUILDINGS, SIGNS SHALL BE POSTED AND MAINTAINED ON EXIT STAIR DOORS IN ACCORDANCE WITH THIS SECTION:

- BUILDINGS OR PORTIONS THEREOF OCCUPIED BY GROUP B OR ARRANGED TO BE OCCUPIED BY MORE THAN 100 PERSONS ABOVE OR BELOW THE STREET LEVEL OR MORE THAN 500 PERSONS IN THE ENTIRE BUILDING.
- HIGH-RISE BUILDINGS SUBJECT TO SECTION 403
- BUILDINGS WHERE ANY STAIR SIDE DOOR IS LOCKED PURSUANT TO SECTION 1008.1.8.7.

EXCEPTION: SIGNS SHALL NOT BE REQUIRED ON EXIT STAIR DOORS OPENING DIRECTLY TO DWELLING OR SLEEPING UNITS IN OCCUPANCY GROUP R WHERE PERMITTED BY SECTION 1013.6.

1026.4.1 OCCUPIED SIDE.

WHERE REENTRY IS NOT PROVIDED FROM A STAIR TO EVERY FLOOR, A SIGN THAT READS:

"NO REENTRY FROM THIS STAIR"

SHALL BE POSTED ON THE OCCUPIED SIDE OF THE STAIR DOOR AT EVERY FLOOR.

1026.4.2 STAIR SIDE.

ON THE STAIR SIDE, SIGNS SHALL BE POSTED AND MAINTAINED AT ALL STAIR DOORS AT EVERY FLOOR. SUCH SIGNS SHALL BE EITHER:

- REENTRY.** WHERE REENTRY IS PROVIDED, A SIGN SHALL READ, "REENTRY ON THIS FLOOR."
- NO REENTRY.** WHERE REENTRY IS NOT PROVIDED ON THAT FLOOR, THE SIGN SHALL READ:
 - "NO REENTRY"; WHERE REENTRY IS NOT PROVIDED ON ANY FLOOR;
 - "NO REENTRY, NEAREST REENTRY ON THE..... AND..... FLOORS"; WHERE REENTRY IS PROVIDED ON OTHER FLOORS; AND
 - "NO REENTRY. REENTRY IS PROVIDED ONLY DURING FIRE EMERGENCIES. NEAREST TELEPHONE ON THEAND..... FLOORS"; WHERE STAIR SIDE DOORS ARE LOCKED IN ACCORDANCE WITH SECTION 403.12.

WHERE DOORS ARE PERMITTED TO BE LOCKED FROM THE STAIR SIDE IN ACCORDANCE WITH SECTION 403.12, SIGNS SHALL BE POSTED THROUGHOUT THE STAIRWAY THAT REENTRY IS PROVIDED ONLY DURING FIRE EMERGENCIES.

1026.4.3 GRAPHICS.

THE LETTERING AND NUMERALS OF THE SIGNS SHALL BE AT LEAST 1/2 INCH (12.7 MM) HIGH OF BOLD TYPE. THE LETTERING AND BACKGROUND SHALL BE CONTRASTING COLORS AND THE SIGNS SHALL BE SECURELY ATTACHED APPROXIMATELY 5 FEET (1524 MM) ABOVE THE FLOOR. THE SIGNS MAY BE EITHER INDEPENDENT OR COMBINED WITH FLOOR AND STAIRWAY IDENTIFICATION SIGNS.

1026.5 WALL SIGNS, STAIR SIDE.

IN HIGH-RISE BUILDINGS SUBJECT TO SECTION 403, SIGNS SHALL BE POSTED AND MAINTAINED ON THE WALL AS FOLLOWS:

- REENTRY.** WHERE A REENTRY DOOR IS RECESSED, A SUPPLEMENTARY SIGN COMPLYING WITH SECTION 1026.4.3, EXCEPT THAT THE LETTERING AND NUMERALS SHALL BE AT LEAST 1 INCH (25 MM) HIGH, SHALL BE SECURELY ATTACHED ON THE WALL OF THE LANDING AND SHALL BE READILY VISIBLE TO THE EVACUEE ON THE STAIRS INDICATING THE LOCATION OF SUCH RECESSED REENTRY DOOR.

- NO REENTRY.** WHERE THERE IS NO REENTRY FROM THE STAIR, AN ADDITIONAL SIGN COMPLYING WITH SUBDIVISION 2 OF SECTIONS 1026.4.2 AND 1026.4.3, EXCEPT THAT THE LETTERING AND NUMERALS SHALL BE AT LEAST 1 INCH (25 MM) HIGH, SHALL BE SECURELY ATTACHED AT THE BEGINNING OF THE DESCENT INTO SUCH PORTION OF THE STAIR ON THE WALL OF THE LANDING AND SHALL BE READILY VISIBLE TO THE EVACUEE ON THE STAIRS.

1026.7 CAPACITY SIGN.

OCCUPANT LOAD SIGNS SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 1004.3.

1026.12 MATERIALS FOR SIGNS.

SIGNS REQUIRED BY THIS SECTION SHALL BE OF METAL OR OTHER DURABLE MATERIAL.

1110.1 SIGNS.

REQUIRED ACCESSIBLE ELEMENTS SHALL BE IDENTIFIED BY THE INTERNATIONAL SYMBOL OF ACCESSIBILITY AT THE FOLLOWING LOCATIONS:

- ACCESSIBLE PARKING SPACES REQUIRED BY SECTION 1106.1 EXCEPT WHERE THE TOTAL NUMBER OF PARKING SPACES PROVIDED IS NO MORE THAN ONE.
- ACCESSIBLE PASSENGER LOADING ZONES.
- ACCESSIBLE AREAS OF RESCUE ASSISTANCE REQUIRED BY SECTION 1007.6.
- ACCESSIBLE ROOMS WHERE MULTIPLE SINGLE-USER TOILET OR BATHING ROOMS ARE CLUSTERED AT A SINGLE LOCATION.
- ACCESSIBLE ENTRANCES WHERE NOT ALL ENTRANCES ARE ACCESSIBLE.
- ACCESSIBLE CHECK-OUT AISLES WHERE NOT ALL AISLES ARE ACCESSIBLE. THE SIGN, WHERE PROVIDED, SHALL BE ABOVE THE CHECK-OUT AISLE IN THE SAME LOCATION AS THE CHECK-OUT AISLE NUMBER OR TYPE OF CHECK-OUT IDENTIFICATION.
- UNISEX TOILET AND BATHING ROOMS.
- ACCESSIBLE DRESSING, FITTING AND LOCKER ROOMS WHERE NOT ALL SUCH ROOMS ARE ACCESSIBLE.
- ACCESSIBLE SEATING.
- ACCESSIBLE PORTABLE TOILETS.
- PUBLIC TELEPHONES.

1110.2 DIRECTIONAL SIGNAGE.

DIRECTIONAL SIGNAGE INDICATING THE ROUTE TO THE NEAREST LIKE ACCESSIBLE ELEMENT SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS. THESE DIRECTIONAL SIGNS SHALL INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY:

- INACCESSIBLE BUILDING ENTRANCES.
- INACCESSIBLE PUBLIC TOILETS AND BATHING FACILITIES.
- ELEVATORS NOT SERVING AN ACCESSIBLE ROUTE.
- AT EACH SEPARATE-SEX TOILET AND BATHING ROOM INDICATING THE LOCATION OF THE NEAREST ACCESSIBLE UNISEX TOILET OR BATHING ROOM WHERE

- PROVIDED IN ACCORDANCE WITH SECTION 1109.2.1.
- AT EXITS AND ELEVATORS SERVING AN ACCESSIBLE SPACE, BUT NOT PROVIDING AN APPROVED ACCESSIBLE MEANS OF EGRESS, SIGNAGE SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 1007.7.

1110.3 OTHER SIGNS.

SIGNAGE INDICATING SPECIAL ACCESSIBILITY PROVISIONS SHALL BE PROVIDED AS FOLLOWS:

- AT EACH DOOR TO AN EGRESS STAIRWAY, EXIT PASSAGEWAY AND EXIT DISCHARGE, SIGNAGE SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 1

MULTIPLE DWELLING LAW

MAJOR ITEMS OF COMPLIANCE ARE SUMMARIZED BELOW. COMPLIANCE WITH ALL PROVISIONS OF THE APPLICABLE PORTIONS OF THE MULTIPLE DWELLING LAW SHALL BE ACHIEVED IN THE SUBJECT DEVELOPMENT, WHETHER OR NOT LISTED IN THIS SUMMARY.

MDL ARTICLE 3: MULTIPLE DWELLINGS - GENERAL PROVISIONS

SECTION 25 (APPLICATION OF ARTICLE 3)

EXCEPT AS MODIFIED BY OTHER PROVISIONS IN THE MULTIPLE DWELLING LAW, ALL PROVISIONS OF ARTICLE 3 SHALL APPLY.

MDL TITLE 1: LIGHT AND AIR

SECTION 26 (HEIGHT, BULK & OPEN SPACES)

THIS PROJECT SHALL COMPLY WITH ALL PROVISIONS OF THE ZONING RESOLUTION OF THE CITY OF NEW YORK.

SECTION 28 (TWO OR MORE BUILDINGS ON SAME LOT)

N/A

SECTION 29 (PAINTING OF COURTS AND SHAFTS)

EXTERIOR WALLS OF COURTS AND SHAFTS SHALL BE HAVE A LIGHT COLORED FINISH.

SECTION 30 (LIGHTING AND VENTILATION OF ROOMS)

PARAGRAPH 1: PROVISIONS OF THIS SECTION SHALL APPLY
PARAGRAPH 2: EVERY ROOM, EXCEPT AS EXPRESSLY PROVIDED IN OTHER SECTIONS OF THE M.D.L., SHALL HAVE WINDOW OPENING UPON A STREET OR LEGAL YARD OR COURT.
PARAGRAPH 3: N/A (ALL APARTMENTS HAVE MORE THAN 3 ROOMS)
PARAGRAPH 4: PROVISIONS FOR BALCONY SHALL COMPLY WITH THE REQUIREMENTS OF THIS PARAGRAPH
PARAGRAPH 5: WILL COMPLY
PARAGRAPH 6: PUBLIC STORAGE ROOMS SHALL NOT REQUIRE WINDOWS
PARAGRAPH 7: IF REQUIRED WINDOWS ARE LOCATED IN AN OFFSET OR RECESS, SUCH OFFSET OR RECESS SHALL BE MINIMUM 6'-0" DIMENSION
PARAGRAPH 8: WINDOWS IN LIVING ROOMS SHALL BE MINIMUM 12 SQUARE FEET IN AREA AND SHALL BE AT LEAST 1/10th OF THE FLOOR AREA OF SUCH LIVING SPACE. OPENING AREA SHALL BE AT LEAST ONE HALF OF THEIR REQUIRED AREA, OR AT LEAST FIVE AND ONE HALF SQUARE FEET.
PARAGRAPH 9: N/A
PARAGRAPH 10: ALL LOT LINE WINDOWS SHALL BE FIREPROOF AND THEIR ASSEMBLIES SHALL PROVIDE A THREE-QUARTER HOUR FIRE RESISTIVE RATING. OPENINGS ON LOT LINE WALLS SHALL BE AN AUTOMATIC FIREPROOF WINDOW.

SECTION 31 (SIZE OF ROOMS)

PARAGRAPH 1: PROVISIONS OF THIS SECTION SHALL APPLY
PARAGRAPH 2: EVERY LIVING ROOM SHALL BE MINIMUM EIGHTY SQUARE FEET OF FLOOR AREA WITH A MINIMUM DIMENSION OF 8 FEET AND SHALL HAVE AT LEAST EIGHT FEET CLEARANCE FROM FINISH FLOOR TO TO THE FINISHED UNDERSIDE OF THE CEILING. AT LEAST ONE LIVING ROOM PER APARTMENT SHALL BE AT LEAST ONE HUNDRED AND THIRTY TWO SQUARE FEET OF FLOOR AREA.
PARAGRAPH 3: N/A
PARAGRAPH 4: N/A
PARAGRAPH 5: ENTRANCE HALLS TO APARTMENTS MAY BE DESIGNATED AS A FOYER, AND SUCH FOYER SHALL NOT BE CONSIDERED A ROOM, IF FLOOR AREA RATIOS OF THIS PARAGRAPH ARE MET.
PARAGRAPH 6a: NO ROOM SHALL BE OCCUPIED FOR SLEEPING PURPOSES BY MORE THAN TWO ADULTS
PARAGRAPH 6b: EVERY ROOM SHALL HAVE AT LEAST 400 CUBIC FEET OF AIR FOR EACH ADULT OCCUPYING SUCH ROOM. ROOMS OCCUPIED BY CHILDREN SHALL HAVE A MINIMUM OF 200 CUBIC FEET OF AIR.

SECTION 32 (ALCOVES)

PARAGRAPH 1: EVERY ALCOVE SHALL BE SEPARATELY LIGHTED AND VENTILATED, WITH A MINIMUM FLOOR AREA OF SEVENTY SQUARE FEET, A MINIMUM HORIZONTAL DIMENSION OF SEVEN FEET AND SHALL HAVE A MINIMUM OPENING OF SIXTY SQUARE FEET INTO THE ROOM WHICH ADJOINS IT.
PARAGRAPH 2: ROOMS SHALL NOT BE SUBDIVIDED AT A FUTURE DATE UNLESS THE SUBDIVISION CONTAINS A SEPARATE WINDOW AS REQUIRED FOR A ROOM AND A MINIMUM FLOOR SPACE OF SEVENTY SQUARE FEET.

SECTION 33 (COOKING SPACES)

PARAGRAPH 1: AREAS INTENDED FOR COOKING OR WARMING OF FOOD SHALL BE DESIGNATED AS EITHER A KITCHEN OR A KITCHENETTE.
PARAGRAPH 2: N/A
PARAGRAPH 3a, b: KITCHENS SHALL BE SPRINKLERED. COMBUSTIBLE MATERIAL WITHIN ONE FOOT OF COOKING APPLIANCES SHALL BE FIRE-RETARDED. TWO FEET OF CLEAR SPACE SHALL BE MAINTAINED ABOVE ANY EXPOSED COOKING SURFACE.
PARAGRAPH 3c: KITCHENETTES SHALL HAVE A WINDOW MEETING THE REQUIREMENTS OF THIS PARAGRAPH OR SHALL HAVE ADEQUATE MECHANICAL VENTILATION.
PARAGRAPH 3e: EVERY KITCHEN OR KITCHENETTE SHALL BE PROVIDED WITH GAS, ELECTRICITY, OR BOTH AND SHALL BE EQUIPPED FOR ARTIFICIAL LIGHTING.

SECTION 34 (ROOMS IN BASEMENTS AND CELLARS)

N/A (NO HABITABLE ROOMS ARE LOCATED IN THE CELLAR)

SECTION 35 (ENTRANCE DOORS AND LIGHTS)

THE OWNER SHALL PROVIDE A LIGHT OR LIGHTS PROVIDING 100 WATTS INCANDESCENT ILLUMINATION AT OR NEAR THE ENTRANCE TO THE BUILDING.

SECTION 36 (WINDOWS AND SKYLIGHTS FOR PUBLIC HALLS AND STAIRS)

N/A (PER ARTICLE I, SECTION 3, PARAGRAPH 11)

SECTION 37 (ARTIFICIAL HALL LIGHTING)

N/A (PER ARTICLE I, SECTION 3, PARAGRAPH 11)

MDL TITLE 2: FIRE PROTECTION AND SAFETY

SECTION 50 (ENTRANCE HALLS)

N/A (PER ARTICLE I, SECTION 3, PARAGRAPH 11)

SECTION 50-a (ENTRANCES, DOORS, LOCKS AND INTERCOMMUNICATION SYSTEMS)

PARAGRAPH 1: ENTRANCE DOORS FROM STREETS, PASSAGEWAYS, COURTS, YARDS AND SIMILAR ENTRANCES SHALL BE SELF CLOSING AND SELF LOCKING AND SHALL REMAIN LOCKED AT ALL TIMES UNLESS AN ATTENDANT IS ON DUTY. ENTRANCE DOORS FROM THE ROOF SHALL BE SELF CLOSING BUT NOT SELF LOCKING. SUCH DOORS SHALL BE LOCKABLE FROM THE INSIDE OF THE DWELLING WITHOUT THE USE OF A KEY.
PARAGRAPH 2: AN INTERCOMMUNICATION SYSTEM BETWEEN EACH APARTMENT AND THE DOOR GIVING PUBLIC ACCESS TO THE MAIN ENTRANCE HALL SHALL BE PROVIDED AT SUCH ENTRANCE DOOR. SUCH INTERCOMMUNICATION SYSTEM SHALL ALLOW THE OCCUPANT TO RELEASE THE LOCKING MECHANISM OF THE ENTRANCE DOOR.
PARAGRAPH 3, 4, 5: ALL SELF LOCKING AND SELF CLOSING DOORS REQUIRED BY THIS SECTION, AND THE INTERCOMMUNICATION SYSTEM, SHALL BE APPROVED BY THE DEPARTMENT HAVING JURISDICTION.

SECTION 50-c (RIGHTS OF TENANTS TO OPERATE AND MAINTAIN A LOBBY ATTENDANT SERVICE)

TENANTS SHALL HAVE THE RIGHT TO OPERATE AND MAINTAIN A LOBBY ATTENDANT SERVICE.

SECTION 51 (SHAFTS, ENCLOSURES AND DUMBWAITERS)

N/A (PER ARTICLE I, SECTION 3, PARAGRAPH 11)

SECTION 51-a (PEEPHOLES)

THE OWNER SHALL PROVIDE AND MAINTAIN A PEEPHOLE IN THE ENTRANCE DOOR OF EACH HOUSING UNIT.

SECTION 51-b (MIRRORS IN CONNECTION WITH SELF-SERVICE ELEVATORS)
ELEVATORS SHALL HAVE A MIRROR WHICH ENABLES A PERSON TO VIEW THE INSIDE OF THE ELEVATOR PRIOR TO ENTERING SUCH ELEVATOR.

SECTION 51-c (RIGHTS OF TENANTS TO INSTALL AND MAINTAIN LOCKS IN CERTAIN ENTRANCE DOORS)

TENANTS SHALL HAVE THE RIGHT TO INSTALL AND MAINTAIN AN ADDITIONAL LOCK ON CERTAIN ENTRANCE DOORS, AS PROSCRIBED IN THIS SECTION.

SECTION 52 (STAIRS)

N/A (PER ARTICLE I, SECTION 3, PARAGRAPH 11)

SECTION 53 (FIRE ESCAPES)

N/A (PER ARTICLE I, SECTION 3, PARAGRAPH 11)

SECTION 54 (CELLAR ENTRANCE)

THERE SHALL BE A DIRECT ENTRANCE TO THE CELLAR FROM THE STREET.

SECTION 55 (WAINSCOTING)

N/A (PER ARTICLE I, SECTION 3, PARAGRAPH 11)

SECTION 56 (FRAME BUILDINGS AND EXTENSIONS)

N/A (CONSTRUCTION TYPE SHALL BE I-C)

SECTION 57 (BELLS; MAIL RECEPTACLES)

BELLS, IF INSTALLED AT THE ENTRANCE TO THE DWELLING OR THE APARTMENTS, SHALL BE MAINTAINED IN WORKING ORDER. A MAIL BOX AREA SHALL BE PROVIDED FOR OCCUPANTS.

SECTION 58 (INCOMBUSTIBLE MATERIALS)

ALL REQUIRED INCOMBUSTIBLE MATERIALS SHALL BE CAPABLE OF SUCCESSFULLY WITHSTANDING STANDARD FIRE TESTS AS PROSCRIBED BY THE CODE.

SECTION 59 (BAKERIES AND FAT BOILING)

N/A

SECTION 60 (MOTOR VEHICLE STORAGE)

N/A (PER ARTICLE I, SECTION 3, PARAGRAPH 11)

SECTION 61 (BUSINESS USES)

N/A (PER ARTICLE I, SECTION 3, PARAGRAPH 11)

SECTION 62 (PARAPETS, GUARD RAILINGS AND WIRES)

OPEN ROOF AREAS, ETC. SHALL BE PROTECTED BY A PARAPET OR GUARDRAIL, RADIO ANTENNAE AND OTHER WIRES SHALL CONFORM TO NYC DEPT. OF BLDG REQUIREMENTS. NO SUCH ANTENNAE OR WIRES SHALL BE ATTACHED TO A SOIL OR VENT LINE.

SECTION 63 (SUB-CURB USES)

N/A (NO HABITABLE ROOMS AT THE CELLAR FLOOR)

SECTION 64 (LIGHTING; GAS METERS; GAS AND OIL APPLIANCES)

PARAGRAPH 1: ALL APARTMENTS AND MEANS OF EGRESS SHALL BE EQUIPPED WITH ADEQUATE LIGHTING.
PARAGRAPH 2: NO GAS METER SHALL BE LOCATED IN A BOILER ROOM, STAIR HALL OR PUBLIC HALL ABOVE THE CELLAR.
PARAGRAPH 3: GAS APPLIANCES SHALL ONLY BE USED OR INSTALLED IN ROOMS WITH A WINDOW, UNLESS SUCH APPLIANCE IS VENTED TO THE OUTER AIR. AUTOMATIC OPERATED GAS APPLIANCES SHALL HAVE AN AUTOMATIC SHUT OFF SWITCH.
PARAGRAPH 4: OIL BURNING EQUIPMENT SHALL BE APPROVED BY THE DEPARTMENT HAVING JURISDICTION.
PARAGRAPH 5: N/A

SECTION 65 (BOILER ROOMS)

PARAGRAPH 1: THE BOILER SHALL BE ENCLOSED IN A ROOM WITH FIREPROOF WALLS EXTENDING FROM FLOOR TO CEILING. ALL DOORS TO SUCH ROOM SHALL BE SELF CLOSING AND INSTALLED IN A FIREPROOF ASSEMBLY.
PARAGRAPH 2: DWELLING ACCESS TO A CELLAR, BASEMENT STAIRS, AND SHAFTS SHALL NOT BE LOCATED IN A BOILER ROOM.

SECTION 66 (LODGING HOUSES)

N/A

SECTION 67 (HOTELS AND CERTAIN OTHER CLASS 1 AND CLASS B DWELLINGS)

N/A (PER ARTICLE I, SECTION 3, PARAGRAPH 11)

SECTION 68 (SMOKE DETECTING DEVICES)

N/A (PER PARAGRAPH 7 OF THIS SECTION)

MDL TITLE 3: SANITATION AND HEALTH

SECTION 75 (WATER SUPPLY)

HOT AND COLD WATER SHALL BE SUPPLIED YEAR ROUND TO ALL DWELLING UNITS

SECTION 76 (WATER CLOSET AND BATH ACCOMMODATIONS)

NO WATER CLOSET SHALL OPEN IN TO A KITCHEN OR KITCHENETTE; EVERY WATER CLOSET SHALL BE AT LEAST TWO FEET FOUR INCHES IN CLEAR WIDTH; FLOORS SHALL BE WATERPROOF, AND SUCH WATERPROOF MATERIAL SHALL EXTEND SIX INCHES ABOVE THE FLOOR LEVEL AT THE WALLS; NO WOOD SHALL PARTLY OR FULLY ENCLOSE A WATER CLOSET OR PLUMBING FIXTURE; WATER CLOSETS SHALL HAVE ADEQUATE LIGHT;

SECTION 77 (PLUMBING AND DRAINAGE)

CONNECTION SHALL BE MADE WITH STREET SEWER OR COMBINED STREET STORM-WATER MAIN AND SEWER; ALL RAINWATER THAT FALLS ON THE SITE SHALL BE CONVEYED TO THE STREET SEWER OR COMBINED STREET STORM-WATER MAIN AND SEWER;

SECTION 78 (REPAIRS)

OWNER SHALL KEEP THE DWELLING AND THE LOT ON WHICH IT IS SITUATED IN GOOD REPAIR.

SECTION 79 (HEATING)

EVERY MULTIPLE DWELLING SHALL BE PROVIDED WITH HEAT, TO THE DEGREE REQUIRED BY THE DEPARTMENT HAVING JURISDICTION, BETWEEN THE DAYS OF OCTOBER 1st TO MAY 31st, AS PROSCRIBED BY THIS SECTION.

SECTION 80 (CLEANLINESS)

ALL PARTS OF A MULTIPLE DWELLING AND THE LOT ON WHICH IT IS SITUATED SHALL BE CLEAN AND FREE FROM DIRT, FILTH, DIRT, ETC.; THE BUILDING SHALL BE CONSTRUCTED SO AS TO BE RAT-PROOF.

SECTION 81 (RECEPTACLES FOR WASTE MATTER)

TRASH CHUTE SHALL BE PROVIDED AT ALL LEVELS. REFUSE ROOM TO BE PROVIDED AT THE BASEMENT.

SECTION 82 (PRIVACY)

WITHIN EACH DWELLING, THERE SHALL BE ACCESS TO EVERY LIVING ROOM AND BEDROOM WITHOUT HAVING TO PASS THROUGH ANY BEDROOM.

SECTION 83 (JANITOR OR HOUSEKEEPER)

N/A (THERE WILL ONLY BE NINE UNITS)

SECTION 84 (CONSTRUCTION STANDARDS FOR THE CONTROL OF NOISE)

CONSTRUCTION SHALL COMPLY WITH CURRENT NOISE CONTROL STANDARDS OF THE CITY OF NEW YORK.

HOUSING MAINTENANCE CODE

MAJOR ITEMS OF COMPLIANCE ARE SUMMARIZED BELOW. COMPLIANCE WITH ALL PROVISIONS OF THE APPLICABLE PORTIONS OF THE HOUSING MAINTENANCE CODE SHALL BE ACHIEVED IN THE SUBJECT DEVELOPMENT, WHETHER OR NOT LISTED IN THIS SUMMARY.

SECTION 27-2005 (DUTIES OF OWNER)

THE OWNER SHALL KEEP THE PREMISES IN GOOD REPAIR

SECTION 27-2010 (CLEANING OF ROOFS, YARDS, COURTS AND OTHER OPEN SPACES)

SEE M.D.L. SECTION 80

SECTION 27-2011 (CLEANING OF INTERIOR SHARED SPACE)

THE OWNER SHALL MAINTAIN THE PUBLIC PARTS OF A DWELLING IN A CLEAN AND SANITARY CONDITION.

SECTION 27-2013 (PAINTING OF PUBLIC PARTS AND WITHIN DWELLINGS)

IN PUBLIC PARTS OF A MULTIPLE DWELLING, THE OWNER SHALL PAINT OR COVER THE WALLS AND CEILINGS WITH WALLPAPER OR OTHER ACCEPTABLE WALL COVERING; REPAIR OR RE-COVER AS NECESSARY. THE SAME REQUIREMENTS APPLY TO THE INTERIOR OF DWELLING UNITS, EXCEPT THAT REPAINTING OR RE-COVERING SHALL OCCUR A MINIMUM OF EVERY THREE YEARS.

SECTION 27-2015 (COURTS AND SHAFTS)

SEE M.D.L. SECTION 29

SECTION 27-2018 (RODENT AND INSECT ERADICATION)

THE OWNER SHALL KEEP THE PREMISES FREE FROM RODENTS, INSECT INFESTATIONS AND OTHER PESTS.

SECTION 27-2021 (RECEPTACLES FOR WASTE MATTER)

SEE M.D.L. SECTION 81

SECTION 27-2024 (WATER SUPPLY TO BUILDINGS)

SEE M.D.L. SECTION 75

SECTION 27-2027 (DRAINAGE OF ROOFS AND COURTS)

SEE M.D.L. SECTION 77

SECTION 27-2028 (CENTRAL HEAT OR ELECTRIC OR GAS HEATING SYSTEM; WHEN REQUIRED)

SEE M.D.L. SECTION 79

SECTION 27-2029 (MINIMUM TEMPERATURE TO BE MAINTAINED)

SEE M.D.L. SECTION 79

SECTION 27-2031 (SUPPLY OF HOT WATER, WHEN REQUIRED)

SEE M.D.L. SECTION 79

SECTION 27-2033 (ACCESS TO BOILER ROOM)

BOILER ROOM SHALL BE READILY ACCESSIBLE TO MEMBERS OF THE DEPARTMENT FOR INSPECTION.

SECTION 27-2037 (DUTY TO PROVIDE ELECTRIC LIGHTING EQUIPMENT IN ALL DWELLINGS)

SEE M.D.L. SECTION 64, PARAGRAPH 1; ALSO, OWNER SHALL INSTALL AND MAINTAIN RECEPTACLE OUTLETS AS REQUIRED BY THE ELECTRICAL CODE.

SECTION 27-2038 (ELECTRIC LIGHTING FIXTURES IN CERTAIN PARTS OF DWELLINGS; FIXTURES AND LIGHTS REQUIRED)

THE OWNER SHALL PROVIDE ADEQUATE LIGHTING TO ALL PUBLIC AREAS AND MEANS OF EGRESS AS REQUIRED BY THE PROVISIONS OF THIS SECTION.

SECTION 27-2039 (LIGHTING TO BE PROVIDED AT NIGHT; OWNER'S RESPONSIBILITY)

WHEREVER NATURAL LIGHT IN PUBLIC SPACES IS NOT SUFFICIENT FOR THE AREA, THE OWNER SHALL PROVIDE ADEQUATE ARTIFICIAL LIGHTING; SUCH LIGHTS SHALL REMAIN ON FROM SUNSET TO SUNRISE.

SECTION 27-2040 (LIGHTS NEAR ENTRANCE WAYS AND IN YARDS AND COURTS OF MULTIPLE DWELLINGS)

SEE M.D.L. SECTION 35; IN ADDITION, LIGHT LEVELS AT THE ENTRANCE SHALL BE MINIMUM 200 WATTS INCANDESCENT; EVERY YARD OR COURT SHALL HAVE AT LEAST ONE LIGHT OF AT LEAST 100 WATTS INCANDESCENT; SUCH LIGHT SHALL REMAIN ON FROM SUNSET TO SUNRISE.

SECTION 27-2041 (PEEPHOLES)

SEE M.D.L. SECTION 51-a

SECTION 27-2042 (MIRRORS IN ELEVATORS)

SEE M.D.L. SECTION 51-b

SECTION 27-2043 (LOCKS IN DWELLING UNIT DOORS)

THE ENTRANCE DOOR SHALL HAVE A KEY LOCK, HEAVY DUTY LATCH SET AND HEAVY DUTY DEAD BOLT, OPERABLE BY A KEY FROM THE OUTSIDE AND A THUMB TURN FROM THE INSIDE.

SECTION 27-2045 (DUTIES OF OWNER AND OCCUPANT WITH RESPECT TO INSTALLATION AND MAINTENANCE OF SMOKE DETECTING DEVICES IN CLASS A MULTIPLE DWELLINGS)

OWNER SHALL PROVIDE AND INSTALL APPROVED AND OPERATIONAL SMOKE DETECTING DEVICES IN EACH DWELLING UNIT IN ACCORDANCE WITH THE REQUIREMENTS OF REFERENCE STANDARD RS17-12.

SECTION 27-2047 (MAIL SERVICE)

SEE M.D.L. SECTION 57

SECTION 27-2048 (FLOOR SIGNS)

EACH FLOOR LEVEL SHALL HAVE A SIGN STATING THE FLOOR LEVEL. SUCH SIGN SHALL BE IN A PUBLIC HALL AND WITHIN THE STAIR ENCLOSURE.

SECTION 27-2049 (STREET NUMBERS)

THE STREET NUMBER SHALL BE POSTED ON THE BUILDING FACADE.

SECTION 27-2057 (LIGHTING AND VENTILATION IN MULTIPLE DWELLINGS; GENERAL REQUIREMENTS)

EVERY REQUIRED WINDOW SHALL BE LOCATED SO AS TO PROPERLY LIGHT THE ROOM

SECTION 27-2058 (LIGHTING AND VENTILATION OF LIVING ROOMS IN MULTIPLE DWELLINGS (ERECTED AFTER NINETEEN HUNDRED TWENTY-NINE))

SEE M.D.L. SECTION 30; IN ADDITION, A DINING SPACE SHALL HAVE A WINDOW WITH AT LEAST ONE EIGHTH THE FLOOR AREA OF SUCH DINING SPACE.

SECTION 27-2063 (LOCATION OF WATER CLOSETS)

WATER CLOSETS SHALL NOT BE LOCATED IN THE CELLAR OR BASEMENT AND IN ANY APARTMENT, NO MORE THAN ONE WATER CLOSET SHALL BE LOCATED WITHIN A SINGLE COMPARTMENT.

SECTION 27-2064 (SIZE AND CONSTRUCTION OF WATER CLOSET COMPARTMENTS)

SEE M.D.L. SECTION 76

SECTION 27-2065 (LIGHT AND VENTILATION OF WATER CLOSET COMPARTMENTS)

COMPARTMENTS SHALL BE MECHANICALLY VENTILATED PER THE REQUIREMENTS OF THIS SECTION.

SECTION 27-2066 (SANITARY FACILITIES IN APARTMENTS)

IN EVERY DWELLING, THERE SHALL BE A WATER CLOSET, A BATH OR SHOWER, AND A WASHBASIN. EVERY BEDROOM SHALL HAVE ACCESS TO A WATER CLOSET WITHOUT HAVING TO PASS THROUGH ANOTHER BEDROOM.

SECTION 27-2070 (FACILITIES AND EQUIPMENT)

SEE M.D.L. SECTION 33 PARAGRAPH 3e; IN ADDITION, EACH DWELLING SHALL HAVE A SINK WITH RUNNING WATER, EQUIPPED WITH A WASTE AND TRAP AT LEAST 2" IN DIAMETER; KITCHENETTES SHALL BE SURROUNDED BY PARTITIONS EXTENDING FROM FLOOR TO CEILING, EXCEPT AT THE ENTRANCE TO SUCH KITCHENETTE.

SECTION 27-2071 (LIGHTING AND VENTILATION)

SEE M.D.L. SECTION 33, PARAGRAPH 3c

SECTION 27-2072 (FIRE PROTECTION)

SEE M.D.L. SECTION 33, PARAGRAPH 3a, b

SECTION 27-2074 (MINIMUM ROOM SIZES)

SEE M.D.L. SECTION 31, PARAGRAPH 2; IN ADDITION TO THOSE REQUIREMENTS, AT LEAST ONE LIVING ROOM SHALL HAVE A MINIMUM FLOOR AREA OF ONE HUNDRED AND FIFTY SQUARE FEET.

SECTION 27-2075 (FIRE PROTECTION)

SEE M.D.L. SECTION 33, PARAGRAPH 3a, b

MEANS OF EGRESS

DEFINITIONS (BC 1002)

41. A MEANS OF EGRESS IS A CONTINUOUS AND UNOBSTRUCTED PATH OF VERTICAL AND HORIZONTAL EGRESS TRAVEL FROM ANY OCCUPIED PORTION OF A BUILDING OR STRUCTURE TO A PUBLIC WAY, CONSISTING OF THE EXIT ACCESS, THE EXIT AND THE EXIT DISCHARGE. (BC 1002.1)

GENERAL MEANS OF EGRESS (BC 1003)

- 42. THE MEANS OF EGRESS CEILING HEIGHT SHALL BE 7'-6", UNLESS PERMITTED TO BE LOWER BY OTHER SECTIONS OF THE CODE. (BC 1003.2)
- 43. UP TO 50 PERCENT OF THE CEILING AREA MAY BE REDUCED IN HEIGHT TO NOT LESS THAN 84 INCHES BY PROTRUDING OBJECTS (BC 1003.3.1)
- 44. FREE STANDING OBJECTS AND HORIZONTAL PROJECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ANSI A117.1. (BC 1003.3.2, 2, BC 1003.3.3, BC 1003.3.4)
- 45. CHANGES IN ELEVATION LESS THAN 12 INCHES SHALL BE PROVIDED VIA SLOPED SURFACES. WHERE THE SLOPE IS GREATER THAN 1:20, RAMPS COMPLYING WITH BC 1010 SHALL BE USED. WHERE THE DIFFERENCE IN ELEVATION IS LESS THAN 6 INCHES AND NO HANDRAIL IS PROVIDED, THE FLOOR FINISH SHALL CONTRAST WITH THE ADJACENT FLOOR FINISH (BC 1003.5)
- 46. AT LOCATIONS NOT REQUIRED TO BE ACCESSIBLE, A SINGLE STEP WITH A MAXIMUM RISER HEIGHT OF 7 INCHES IS PERMITTED IN F, G, R-2 AND R-3 OCCUPANCIES. (BC 1003.5)
- 47. A STEP WITH A SINGLE RISER OR A STAIR WITH TWO RISERS AND A TREAD IS PERMITTED IN R-2 AND R-3 OCCUPANCIES. THE MINIMUM DEPTH OF TREAD IS 13 INCHES AND A HANDRAIL COMPLYING WITH BC 1009.11 IS PROVIDED WITHIN 30 INCHES OF CENTERLINE OF THE STAIR. (BC 1003.5)
- 48. THE REQUIRED CAPACITY OF A MEANS OF EGRESS SHALL NOT BE DIMINISHED ALONG THE PATH OF EGRESS TRAVEL. (BC 1003.6)

OCCUPANT LOAD (BC 1004)

49. THE OCCUPANT LOAD SHALL BE ESTABLISHED IN ACCORDANCE WITH BC 1004.1.1 THROUGH BC 1004.1.3 (BC 1004.1)

MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT (TABLE 1004.1.2)

USE OF SPACE	FLOOR AREA IN SF PER OCCUPANT
RESIDENTIAL	200 GROSS WITHIN DWELLING UNITS

- 50. WHERE EXITS SERVE MORE THAN ONE FLOOR, ONLY THE OCCUPANT LOAD OF EACH FLOOR CONSIDERED INDIVIDUALLY SHALL BE USED IN COMPUTING THE REQUIRED CAPACITY OF THE EXITS AT THAT FLOOR, PROVIDED THE EXIT CAPACITY DOES NOT DECREASE IN THE DIRECTION OF EGRESS TRAVEL. (BC 1004.4)
- 51. WHERE MEANS OF EGRESS FROM FLOORS ABOVE AND BELOW CONVERGE AT AN INTERMEDIATE LEVEL, THE CAPACITY OF THE MEANS OF EGRESS FROM THE POINT OF CONVERGENCE SHALL NOT BE LESS THAN THE SUM OF THE TWO FLOORS. (BC 1004.5)
- 52. THE OCCUPANT LOAD FROM A MEZZANINE LEVEL SHALL BE ADDED TO THE OCCUPANT LOAD OF THE FLOOR ONTO

CONTRACTOR REQUIREMENTS

GENERAL NOTES

- 1. THE TERM "CONTRACTOR" SHALL APPLY TO ALL SUB CONTRACTORS AND/OR THEIR EMPLOYEES.
2. ALL WORK AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE, NEW YORK CITY FIRE DEPARTMENT RULES AND REGULATIONS, UTILITY COMPANY REQUIREMENTS, THE RULES AND REQUIREMENTS OF OTHER AUTHORITIES HAVING JURISDICTION, AND THE BEST TRADE PRACTICES. ANY NONCONFORMING WORK SHALL BE CURED AT THE EXPENSE OF THE CONTRACTOR RESPONSIBLE FOR THAT WORK.
3. THE PROVISIONS OF CHAPTER 33 OF THE 2008 NEW YORK CITY BUILDING CODE SHALL GOVERN THE CONDUCT OF ALL CONSTRUCTION AND DEMOLITION OPERATIONS WITH REGARD TO THE SAFETY OF THE PUBLIC AND PROPERTY.
4. ALL MATERIALS, ASSEMBLIES, FORMS, AND METHODS OF CONSTRUCTION AND SERVICE EQUIPMENT TO BE INCORPORATED IN THE WORK SHALL BE IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE ASTM STANDARD APPLICABLE, AND TO CONFORM TO THE STANDARDS AND RECOMMENDATIONS OF THE VARIOUS TRADE INSTITUTES (ACI, AISC, ETC.) WHERE APPLICABLE. ALL MATERIALS INCORPORATED INTO THE WORK SHALL BE NEW AND SHALL COMPLY WITH THE REQUIREMENTS OF ARTICLE 113 OF THE GENERAL ADMINISTRATIVE PROCEDURES (GAP).
5. THE ARCHITECT SHALL NOT HAVE CONTROL NOR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF CONSTRUCTION, FABRICATION, PROCUREMENT, SHIPMENT, DELIVERY, OR INSTALLATION, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. FOR THE ACTS OR OMISSION OF THE CONTRACTORS, SUB-CONTRACTORS, SUPPLIERS, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL CONDITIONS AND MATERIALS WITHIN THE PROPOSED CONSTRUCTION AREA. THE CONTRACTOR SHALL DESIGN AND INSTALL ADEQUATE SHORING AND BRACING FOR ALL STRUCTURAL OR REMOVAL TASKS. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR ANY DAMAGE OR INJURIES CAUSED BY OR DURING THE EXECUTION OF THE WORK.
7. PLUMBING WORK SHALL BE PERFORMED BY PERSONS LICENSED IN THEIR TRADES, WHO SHALL ARRANGE FOR AND OBTAIN THROUGH THE DEPARTMENT OF BUILDINGS ALL REQUIRED PERMITS, INSPECTIONS AND REQUIRED SIGN OFFS.
8. ELECTRICAL WORK SHALL BE PERFORMED BY PERSONS LICENSED IN THEIR TRADES, WHO SHALL ARRANGE FOR AND OBTAIN THROUGH THE BUREAU OF ELECTRICAL CONTROL ALL REQUIRED PERMITS, INSPECTIONS AND REQUIRED SIGN OFFS.
9. THE CONTRACTOR SHALL DO ALL CUTTING, PATCHING, REPAIRING AS REQUIRED TO PERFORM ALL OF THE WORK INDICATED ON THE DRAWINGS, AND ALL OTHER WORK THAT MAY BE REQUIRED TO COMPLETE THE JOB.
10. THE TERM "FINISH FLOOR" SHALL MEAN THE NORMAL FINISHED SURFACE OF THE FLOOR LEVEL. ALL ELEVATIONS GIVEN FOR EXISTING BUILDINGS ARE TO FINISHED FLOOR. THE CONTRACTOR SHALL FIELD VERIFY ALL ELEVATIONS FOR EXISTING STRUCTURES PRIOR TO THE COMMENCEMENT OF WORK.
11. THE CONTRACTOR SHALL CORRECT ANY VARIATIONS IN FLOOR ELEVATIONS CREATED BY THE REMOVAL OF PARTITIONS AND/OR FOR THE INSTALLATION OF NEW DOOR OPENINGS.
12. THE CONTRACTOR SHALL NOT CONSTRUCT, UNLESS OTHERWISE NOTED, INTERIOR CMU PARTITION WALLS TO FULL HEIGHT UNTIL ALL PIPES, DUCTS, ETC., ARE IN PLACE.
13. THE CONTRACTOR SHALL PATCH AND REPAIR ALL FLOORS, WALLS CEILINGS, ETC., DAMAGED OR EXPOSED DUE TO WORK OR REMOVALS AND FINISH TO MATCH ADJOINING SURFACES.
14. THE CONTRACTOR SHALL NOT INSTALL SUSPENDED OR FURRED CEILINGS IN AREAS WHERE PIPES ARE TO BE CONCEALED UNTIL THE PIPING HAS BEEN TESTED.
15. ALL ELECTRICAL INDICATIONS ON ARCHITECTURAL DRAWINGS ARE FOR LOCATION PURPOSES ONLY.
16. THE CONTRACTOR SHALL COORDINATE OPENINGS IN THE FOUNDATION AND EXTERIOR WALLS FOR THE INSTALLATION OF CONDUITS AND BOXES FOR ELECTRICAL EQUIPMENT.
17. LOCATIONS AND DIMENSIONS OF CONCRETE EQUIPMENT PADS IN THESE DRAWINGS ARE APPROXIMATE. FINAL LOCATIONS AND SIZES MUST BE COORDINATED WITH THE EQUIPMENT MANUFACTURER AND ARE SUBJECT TO APPROVAL WITH THE EQUIPMENT SHOP DRAWINGS. THERE SHALL BE NO ADDITIONAL MONIES PAID FOR INCREASE IN SIZE OF PAD DUE TO DIFFERENCE IN SIZE OF THE EQUIPMENT CHOSEN BY THE CONTRACTOR FROM THAT OF MODEL NUMBER/SIZE INDICATED IN CONTRACT DOCUMENTS.
18. DIMENSIONS ON PLANS ARE INDICATED FROM SURFACE TO SURFACE BETWEEN WALLS, PARTITIONS AND OTHER ITEMS EXCLUSIVE OF FINISHES.
19. SIZE OF MASONRY UNITS AND WOOD MEMBERS ON PLANS, BUILDING ELEVATIONS AND SECTIONS ARE SHOWN AS NOMINAL SIZE.
20. ADDITIONAL NOTES THAT ARE APPLICABLE TO THIS PROJECT MAY BE FOUND THROUGHOUT THE CONTRACT DRAWINGS.
PERMITS, ETC.
21. BEFORE COMMENCING WORK, THE CONTRACTOR SHALL FILE ALL REQUIRED INSURANCE CERTIFICATES WITH THE DEPARTMENT OF BUILDINGS, OBTAIN ALL REQUIRED PERMITS, AND PAY ALL FEES REQUIRED BY THE GOVERNING AGENCIES.
22. CONTRACTOR SHALL ARRANGE FOR ALL INSPECTIONS AND FORWARD COPIES OF ALL SIGN-OFFS AND CERTIFICATE OF OCCUPANCY (IF REQUIRED) TO THE ARCHITECT.
23. CONTRACTOR TO NOTIFY ARCHITECT OF ANY CHANGES REQUIRED TO THE APPROVED PERMIT DRAWINGS.
24. ALL PERMITS ISSUED BY THE DEPARTMENT OF BUILDINGS SHALL BE POSTED IN A CONSPICUOUS PLACE OPEN TO PUBLIC INSPECTION FOR THE ENTIRE DURATION OF THE WORK, OR THE USE AND THE OPERATION OF THE EQUIPMENT OR UNTIL THE EXPIRATION OF THE PERMIT. CONTRACTOR SHALL FORWARD COPIES OF ALL BUILDING DEPARTMENT DOCUMENTS AND PERMITS TO THE ARCHITECT FOR RECORD. NO WORK AT THE SITE IS TO COMMENCE UNTIL THE PLANS HAVE BEEN APPROVED AND THE APPLICABLE PERMIT IS ISSUED BY THE APPROPRIATE GOVERNING ENTITY.
25. WHERE A SITE SAFETY PLAN IS REQUIRED BY THE BUILDING DEPARTMENT, THE CONTRACTOR SHALL DEVELOP AND OBTAIN APPROVAL FOR SUCH PLAN

COORDINATION

- 26. THE CONTRACTOR SHALL COORDINATE ALL WORK PROCEDURES WITH THE STIPULATIONS OF LOCAL AUTHORITIES, BUILDING MANAGEMENT AND/OR BOARD OF DIRECTORS.
27. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES, DIMENSIONS, SELECTING FABRICATION PROCESSES AND TECHNIQUES FOR CONSTRUCTION. CONTRACTOR WILL COORDINATE THE WORK OF ALL OTHER TRADES AND SUBCONTRACTORS, AND ASSURE THAT ALL WORK IS PERFORMED IN A SAFE, COMPLETE AND SATISFACTORY MANNER.
28. THE CONTRACTOR SHALL LAY OUT HIS OWN WORK, AND SHALL PROVIDE ALL

DIMENSIONS REQUIRED FOR OTHER TRADES: PLUMBING, ELECTRICALS, ETC.

- 29. CONTRACTORS SHALL BE RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKAGES, COLLAPSE, DISTORTIONS, AND OFF ALIGNMENT ACCORDING TO APPLICABLE CODES, STANDARDS AND GOOD PRACTICE, SUB CHAPTER 33 (BC 3301.1)
30. DRAWINGS ARE NOT TO BE SCALED; WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL HAVE PRECEDENCE. ALL WORK SHALL BE LAID OUT BY DIMENSIONS; DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT.
31. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ARCHITECT MUST BE NOTIFIED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS.
32. CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS, LOCATION AND DISPOSITION OF EXISTING UTILITIES AND EASEMENTS.
33. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK, USING THEIR BEST SKILL AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
34. CONTRACTOR SHALL COORDINATE LOCATIONS OF ALL LIGHT SWITCHES, PANELS, LIGHT FIXTURES, OUTLETS, PLUMBING FIXTURES AND FITTINGS, THERMOSTATS AND DOOR BELLS IN ELEVATION WITH ARCHITECT.

SCHEDULE AND SUBMITTALS

- 35. EACH CONTRACTOR SHALL PREPARE A PROPOSED CONSTRUCTION SCHEDULE AND SUBMIT SAME WITH THEIR BID. CONTRACTOR SHALL REFER ALL QUESTIONS AS TO THE MEANING OR RESOLUTION OF THE CONSTRUCTION DOCUMENTS TO THE ARCHITECT FOR INTERPRETATION BEFORE START OF WORK.
36. UPON AWARD OF THE CONTRACT, THE CONTRACTOR SHALL PREPARE A SCHEDULE OF SUBMITTALS AS DESCRIBED IN THE SPECIFICATIONS.
37. ALL CONTRACTORS SHALL BE RESPONSIBLE TO COORDINATE THEIR WORK WITH THE WORK OF ALL OTHER CONTRACTORS, IN ORDER TO PRECLUDE ANY INTERFERENCE BETWEEN PIPING, WIRING, LIGHTING FIXTURES, AIR CONDITIONING DUCTING, PLUMBING, MECHANICAL EQUIPMENT, AND/OR CONSTRUCTION ASSEMBLIES, ETC.
38. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS, CUTS AND SAMPLES OF ALL CONSTRUCTION ASSEMBLIES FOR REVIEW BY THE ARCHITECT BEFORE COMMENCING ANY WORK. NO WORK IS TO BE PERFORMED WITHOUT THE AFOREMENTIONED. THE ARCHITECT AND/OR OWNER RESERVE THE RIGHT TO REJECT ANY SUCH SUBMISSIONS.
39. CONTRACTOR SHALL SUBMIT SAMPLES OF ALL FINISH MATERIALS OR AS REQUIRED TO THE ARCHITECT FOR REVIEW AND ACKNOWLEDGEMENT OF CONFORMANCE TO THE DESIGN INTENT PRIOR TO PROCEEDING.

QUALITY OF WORK

- 40. EACH CONTRACTOR SHALL PROVIDE LABOR, SUPERVISION, MATERIALS, EQUIPMENT & ACCESSORIES, AND COORDINATE, PROCURE, FABRICATE, DELIVER, ERECT OR INSTALL, INTERFACE WITH ANY NEW OR EXISTING WORK, START, TEST ALL WORK AS PER CODE AND CONSTRUCTION DOCUMENTS IN ORDER TO PROVIDE THE OWNER WITH A COMPLETE ASSEMBLY OR SYSTEM.
41. MOCK-UPS OF ASSEMBLIES AND AS REQUIRED FOR QUALITY CONTROL OF FINISHED WORK SHALL BE AS REQUIRED BY THE OWNER AND/OR ARCHITECT, OR AS DESCRIBED IN THE SPECIFICATIONS.
42. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT REQUIRED FOR PROPER CONSTRUCTION OF ANY PART OF THE WORK SHALL BE INCLUDED AS IF THEY WERE INDICATED IN THE DRAWINGS.
43. THE CONTRACT DOCUMENTS CONTEMPLATE A FINISHED PIECE OF WORK OF SUCH CHARACTER AND QUALITY AS REASONABLY INFERRABLE FROM THEM. THE CONTRACTOR ACKNOWLEDGES THAT THE CONTRACT INCLUDES AN ALLOWANCE OF MONEY SUFFICIENT TO MAKE THE PROJECT COMPLETE AND OPERATIONAL IN COMPLIANCE WITH GOOD PRACTICE AND AGREES THAT INADVERTENT MINOR DISCREPANCIES OR OMISSIONS OR THE FAILURE TO SHOW DETAILS OR TO REPEAT ANY PART OF THE CONTRACT DOCUMENT FIGURES OR NOTES GIVEN ON ANOTHER SHALL NOT BE THE CAUSE FOR ADDITIONAL CHARGES OR CLAIMS.
44. ALL PIPING AND WIRING SHALL BE REMOVED TO A POINT OF CONCEALMENT AND SHALL BE PROPERLY CAPPED OR PLUGGED.
45. CONTRACTOR SHALL COMPLY WITH RECOMMENDATIONS OF MANUFACTURERS FOR INSTALLATION AND USE OF ALL PRODUCTS. IF RECOMMENDATIONS CONFLICT WITH DOCUMENTS, CONTRACTOR WILL NOTIFY ARCHITECT FOR RESOLUTION.
46. WHEREVER A PARTICULAR MANUFACTURER'S PRODUCT IS SPECIFIED HEREIN, IT IS TO BE USED, APPLIED, OR OTHERWISE INCORPORATED INTO THE WORK IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR SUCH USAGE.
47. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING FLOOR FINISH MATERIALS TO ENSURE THAT THE TRANSITIONS BETWEEN FLOORING MATERIALS WILL BE SMOOTH AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
48. THE APPLICATION OF ANY PAINT OR WALL COVERING MATERIALS WILL CONSTITUTE ACCEPTANCE OF SURFACES BY EACH SPECIFIC SUBCONTRACTOR AND ASSUMPTION OF RESPONSIBILITY FOR ALL SUBSEQUENT FINISHING AND RESULTS THEREOF.
49. THE CONTRACTOR SHALL PROMPTLY REMOVE FROM THE PREMISES ALL WORK CONDEMNED BY THE ARCHITECT AS FAILING TO CONFORM TO THE CONTRACT DOCUMENTS WHETHER INCORPORATED OR NOT, AND CONTRACTOR SHALL PROMPTLY REPLACE AND RE-EXECUTE HIS OWN WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS WITHOUT EXPENSE TO THE OWNER. THE CONTRACTOR SHALL BEAR THE EXPENSE OF MAKING GOOD ALL WORK OF OTHER CONTRACTORS DAMAGED BY SUCH REMOVAL OR REPLACEMENT.
50. EACH CONTRACTOR WILL BE HELD STRICTLY RESPONSIBLE FOR THEIR WORK. ANY DISCREPANCIES IN THE PLANS OR DETAILS OR SPECIFICATIONS SHALL BE IMMEDIATELY CALLED TO THE ATTENTION OF THE ARCHITECT.

SYMBOLS

Table of symbols for architectural drawings. Includes North Arrow, Title Mark, Keynote, Text, Column Grid, Match Line, Section Call Out, Detail Call Out, Exterior Elevation Call Out, Interior Elevation Call Out, Room Tag, Wall Tag, Door Tag, Window Tag, Louver Tag, Equipment Tag, Elevation Tag, Ceiling Height Tag, Point Elevation, Chase, Floor Drain, Area Drain, Planter Drain, Fire Extinguisher Cabinet, Existing Wall to Remain, Wall to be Demolished, New Wall, Item to be Removed, Property Line, Fire Rated Walls (1, 2, 3 hour), Exit Sign, Smoke Detector, Carbon Monoxide Detector, Elevator Lobby Smoke Detector, Emergency Light, Apartment Electric Panel, Apartment Communications Panel, Revision Bubble and Revision Number.

LEGEND

Legend table showing material patterns and names: Gypsum Board, Gypsum Shaft Board, Steel, Aluminum, Finish Wood, Solid Wood, Plywood, Batt Insulation, Rigid Insulation, Glass, Earth, Porous Fill, Concrete, Brick, Concrete Block, Glazed Concrete Block, Terrazzo, Marble, Pre-cast Concrete, Duct Wall.

ABBREVIATIONS

Table of abbreviations for architectural terms: A/C (A.C.), A.C.T., A.D., A.F.F., A.N., A.P., ABV., ADJ., ADJUST., ALUM., APT(S), @, BA., B.F., BR., B.S.A., BT., BD., BETW. BLDG., BM., B.O., BOTT., BR., BKFT., B.C.L., C.J., C.L.L., C.O., C.P., C.T., C.W., CAB., CATV, CEM., CL., CLG., COL., CONC., CONT., CORR., CPT., D.A., DR., D.R., D.V., D.F., D.U., D.W., DET., DIA., DIAG., DIM., DN., DO., DWG., E.C., E.H., E.J., EL., ELEC., ELEV., EMR., EQ., EQUIP., EXP., EXT., F., F.A.I., F.E., F.E.C., F.H., F.D., F.F., F.SP., F.P.S.C., FDN., FIN., FIN. FL., FIXT., FL., F.D., F.O., F.P.L., G.B., G.F.I., GA., GALV., GEN., GL., GR., GWB, GYP., GYP.BD., HT., H.B., H.M., HOR., H.P., H.R., HR., H.V.A.C., H.W., I.D., INCL., INSUL., INT., AIR CONDITIONER, ACUSTIC CEILING TILE, AREA DRAIN, ABOVE FINISH FLOOR, AS NOTED, APARTMENT ELECTRIC PANEL, ADJACENT, ADJUSTABLE, ALUMINUM, APARTMENT(S), AT, BATH, BOILER FLUE, BEDROOM, BOARD OF STANDARDS AND APPEALS, BATHTUB, BOARD, BETWEEN, BUILDING, BEAM, BOTTOM OF, BOTTOM BRICK, BREAKFAST ROOM, BROOM CLOSET, CONTROL JOINT, CONTRACT LIMIT LINE, CLEAN OUT, COMMUNICATIONS PANEL, CERAMIC TILE, COLD WATER, CABINET, CABLE TELEVISION, CEMENT, CLOSET, CEILING, COLUMN, CONCRETE, CONTINUOUS, CORRIDOR, CARPET, DINING ALCOVE, DRAIN, DINING ROOM, DRYER VENT, DRINKING FOUNTAIN, DWELLING UNIT, DISHWASHER, DETAIL(S), DIAMETER, DIAGONAL, DIMENSION, DOWN, DITTO, DRAWING, EXPOSED CONCRETE, ELECTRIC HEATER, EXPANSION JOINT, ELEVATION LEVEL, ELECTRIC, ELEVATOR, ELEVATOR MACHINE ROOM, EQUAL, EQUIPMENT, EXPANSION, EXTERIOR, FOYER, FRESH AIR INTAKE, FIRE EXTINGUISHER, FIRE EXTINGUISHER CABINET, FULL HEIGHT, FINISH OPENING, FIREPROOF, FIRE STANDPIPE, FIREPROOF SELF CLOSING FOUNDATION, FINISH(ED), FINISHED FLOOR, FIXTURE, FLOOR, FLOOR DRAIN, FINISH OPENING, FIRE PLACE, GRAB BAR, GROUND FAULT INTERRUPTER, GAUGE, GALVANIZED, GENERAL, GLASS, GRADE, GYPSUM WALL BOARD, GYPSUM, GYPSUM BOARD, HEIGHT, HOSE BIBB, HOLLOW METAL, HORIZONTAL, HIGH POINT, HANDRAIL, HOUR, HEATING VENTILATING AND AIR CONDITIONING, HOT WATER, INSIDE DIAMETER, INCLUDING, INSULATION, INTERIOR, J.C.L., JT., K., KTTE., KX, L.L.W., L.C., LIB., L.P., L.R., LAM., LAV., LDR., LT.WT., M.B., M.BR., MECH., M.O., M.T., MEZ., MIN., MISC., MAX., MP., N/A, N.I.C., N.T.S., NO. (#), NOM., O.C., O.D., O.H., OPG., OPP., P.T., P.D., P.E., P.R., P.C., PTN., P.C., PL., P.L., POL., P.T., PTD., Q.T., R., R.D., R.H., RAD., REC., REF., REG., RESIL., RM., R.C., S., S.E., S.F., S.O., S.S., S.S.D., S.T.C., SEP., SIM., SH., SP., ST. (STL.), ST. STL., STOR., STY., S.W., T., T.B., T.C., T.O., T.O.C., T.O.S., TX, T.W., TEMP., TERR., TH., THICK, TYP., U., U.C., U.O.N., V.C.T., V.P., V.T., VENT., VEST., W/., W/D, W.C., W.I., W.I.C., W.M., W.P., W.P.M., W.R., W.R.G.B., W.T., WD., JANITOR CLOSET JOINT, KITCHEN, KITCHENETTE, KITCHEN EXHAUST, LOT LINE WINDOW, LINEN CLOSET, LIBRARY, LOW POINT, LIVING ROOM, LAMINATED, LAVATORY, LEADER, LIGHT WEIGHT, MASTER BATHROOM, MASTER BEDROOM, MECHANICAL, MASONRY OPENING, MEN'S TOILET, MEZZANINE, MINIMUM, MISCELLANEOUS, MAXIMUM, MIDPOINT, NOT APPLICABLE, NOT IN CONTRACT, NOT TO SCALE, NUMBER, NOMINAL, ON CENTER, OUTSIDE DIAMETER, OPPOSITE HAND, OPENING, OPPOSITE, PAINT, PLANTER DRAIN, PASSENGER ELEVATOR, POWDER ROOM, PANTRY CLOSET, PARTITION, PIECE, PLATE, PROPERTY LINE, POLISHED, PRESSURE TREATED, PAINTED, QUARRY TILE, RANGE, ROOF DRAIN, RANGE HOOD, RADIATOR, RECESSED, REFRIGERATOR, REGISTER, RESILIENT, ROOM, REFUSE CHUTE, SINK, SERVICE ELEVATOR, SQUARE FEET, SLAB OPENING, SLOP SINK, SLIDING SHOWER DOOR, SOUND TRANSMISSION CLASS, SEPARATE, SIMILAR, SHOWER, SPRINKLER, STEEL, STAINLESS STEEL, STORAGE, STORY, SHEAR WALL, TUB, TOWEL BAR, TOP OF COPING, TOP OF, TOP OF CURB, T.O.C., TOP OF SLAB, TOILET EXHAUST, TOP OF WALL, TEMPERED, TERRACE, TYPICAL, URINAL, UNDERCUT, UNLESS OTHERWISE NOTED, VINYL COMPOSITION TILE, VISION PANEL, VINYL TILE, VENTILATION, VESTIBULE, WITH, WASHER/DRYER, WATER CLOSET, WROUGHT IRON, WALK IN CLOSET, WASHING MACHINE, WATER PROOF, WATER PROOF MEMBRANE, WATER RESISTANT, WATER RESISTANT GYPSUM BOARD, WOMEN'S TOILET, WOOD

NORTH 10TH STREET

138-142 NORTH 10TH STREET BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER area with a grid for DOB STAMPS / SIGNATURES.

Table with columns: REVISION, ISSUE, REMARKS. Contains a row for DECEMBER 01, 2014 FILING DOCUMENTS.

FILING DOCUMENTS

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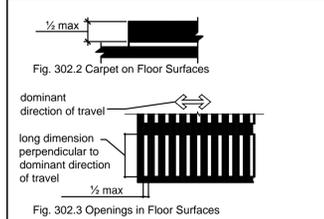


DATE 1-Dec-14
SCALE NTS
CONTRACTOR NOTES, SYMBOLS, AND ABBREVIATIONS

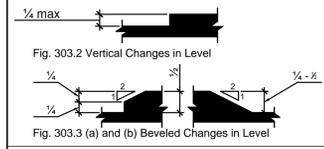
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BUILDING BLOCKS

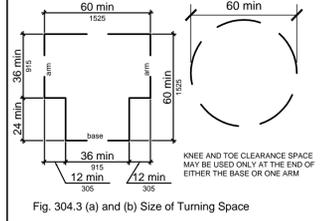
302 FLOOR SURFACES



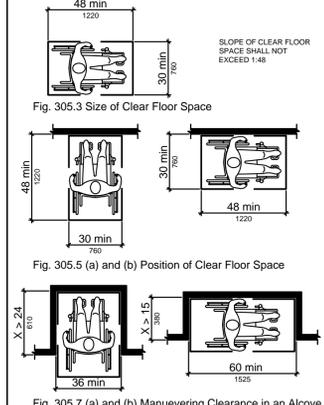
303 CHANGES IN LEVEL



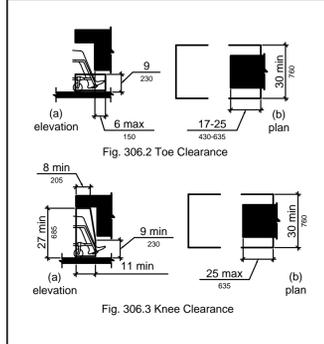
304 TURNING SPACE



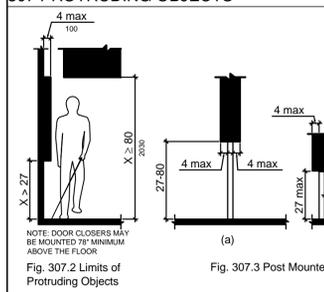
305 CLEAR FLOOR SPACE



306 KNEE & TOE CLEARANCE

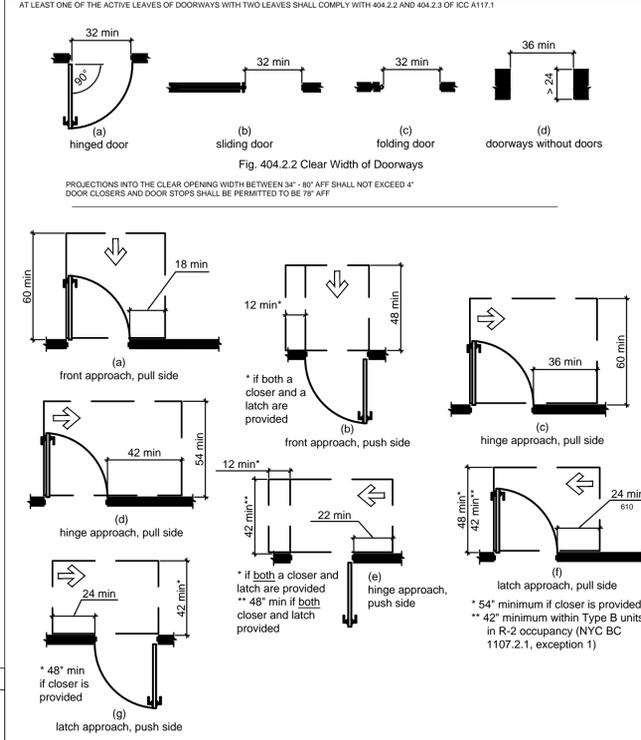


307 PROTRUDING OBJECTS



ACCESSIBLE ROUTES

404 DOORS AND DOORWAYS



403 WALKING SURFACES

WALKING SURFACES SHALL NOT BE STEEPER THAN 1:20. CROSS SLOPE SHALL NOT EXCEED 1:48.



403.5.1 Clear Width at Turn



403.5.1 Clear Width at Turn (Exception)



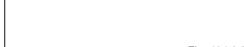
403.5.1 Clear Width at Turn



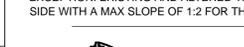
403.5.1 Clear Width at Turn



403.5.1 Clear Width at Turn



403.5.1 Clear Width at Turn



403.5.1 Clear Width at Turn



403.5.1 Clear Width at Turn



403.5.1 Clear Width at Turn



403.5.1 Clear Width at Turn

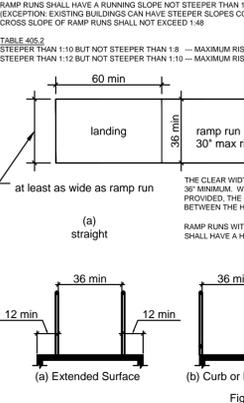


THRESHOLDS (404.2.4): SHALL BE 1/2" MAXIMUM IN HEIGHT AND COMPLY WITH SECTIONS 302 AND 303. EXCEPTION: EXISTING AND ALTERED THRESHOLDS 3/4" MAXIMUM IN HEIGHT WITH A BEVELED EDGE ON EACH SIDE WITH A MAX SLOPE OF 1:2 FOR THE HEIGHT EXCEEDING 1/2".

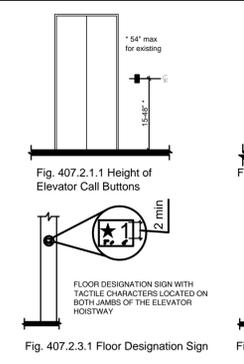
DOOR HARDWARE (404.2.6): OPERABLE PARTS SHALL BE 34" - 48" ABOVE THE FINISH FLOOR. [EXCEPTION: LOCKS USED FOR SECURITY PURPOSES AND NOT FOR NORMAL OPERATION ARE PERMITTED IN ANY LOCATION]

405 RAMPS

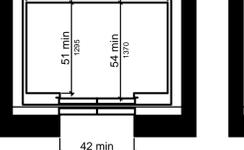
RAMP RUNS SHALL HAVE A RUNNING SLOPE NOT STEEPER THAN 1:12 [EXCEPTION: EXISTING BUILDINGS CAN HAVE STEEPER SLOPES COMPLYING WITH TABLE 405.2 WHEN NECESSARY DUE TO SPACE LIMITATIONS] CROSS SLOPE OF RAMP RUNS SHALL NOT EXCEED 1:48



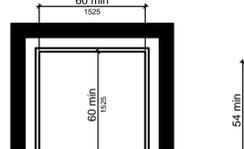
407 ELEVATORS



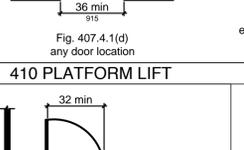
407.4.1 (a) centered door



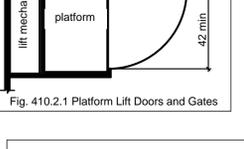
407.4.1 (b) side (off-centered) door



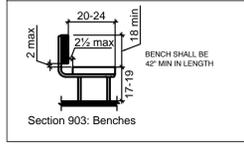
407.4.1 (c) any door location



407.4.1 (d) any door location



407.4.1 (e) existing elevator car configuration

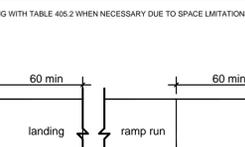


410 PLATFORM LIFT

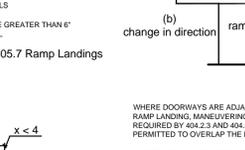


BUILT IN FURNISHINGS AND EQUIPMENT

903, BENCHES

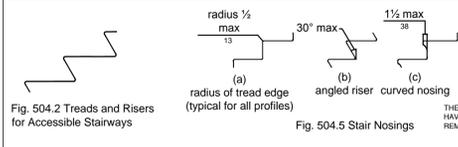


904, SALES AND SERVICE COUNTERS

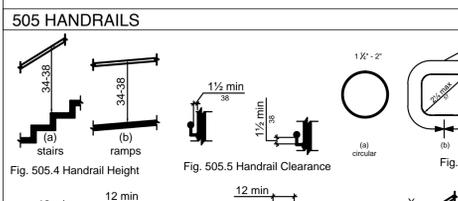


GENERAL SITE AND BUILDING ELEMENTS

504 STAIRWAYS



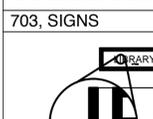
505 HANDRAILS



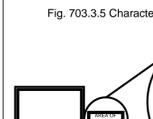
505.10.1 Top and Bottom Handrail Extensions at Ramps



505.10.2 Top Handrail Extension at Stairs

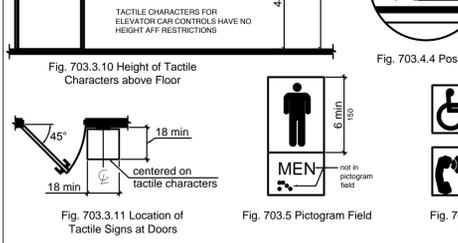


505.10.3 Bottom Handrail Extension at Stairs

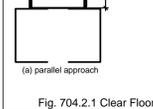


COMMUNICATION ELEMENTS AND FEATURES

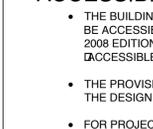
703, SIGNS



704, TELEPHONES



705 DETECTABLE WARNINGS



ACCESSIBILITY NOTES

- THE BUILDING, SITE AND FACILITIES SHALL BE DESIGNED AND CONSTRUCTED TO BE ACCESSIBLE IN ACCORDANCE WITH THE MOST RECENT UPDATES TO THE 2008 EDITION OF THE NEW YORK CITY BUILDING CODE AND WITH ICC A117.1 2003 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
- THE PROVISIONS OF CHAPTER 11 AND APPENDICES E, N AND P SHALL GOVERN THE DESIGN FOR ACCESSIBILITY.
- FOR PROJECTS INVOLVING NEW MULTIFAMILY HOUSING OF FOUR OR MORE UNITS, THE REQUIREMENTS OF THE FAIR HOUSING ACT SHALL BE MET VIA IMPLEMENTATION OF THE TECHNICAL CRITERIA OF ICC A117.1 2003
- FOR COMMERCIAL PROJECTS, ACCESSIBLE FEATURES SHALL MEET OR EXCEED THE MOST PRESCRIPTIVE REQUIREMENTS OF EITHER THE NYC BUILDING CODE OR THE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN, AS PUBLISHED BY THE DEPARTMENT OF JUSTICE.

ACCESSIBILITY DIAGRAMS

THE DIAGRAMS AS DEPICTED ON THIS SHEET AND OTHERS ARE BASED ON THE ILLUSTRATIONS PROVIDED IN ICC A117.1 2003 AND ARE MEANT TO SUMMARIZE THE ESSENTIAL REQUIREMENTS OF STANDARD. THE TEXT OF THE STANDARD CONTAINS ADDITIONAL REQUIREMENTS WHICH MUST BE MET IN THE DESIGN AND CONSTRUCTION OF BUILDINGS AND THEIR FACILITIES. REFER TO THE TEXT FOR THESE ADDITIONAL REQUIREMENTS.

NORTH 10TH STREET

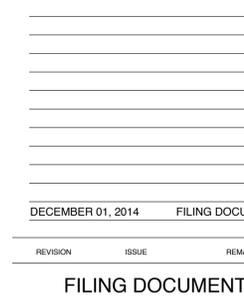
138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



COMMUNICATION ELEMENTS AND FEATURES

703, SIGNS



704, TELEPHONES



705 DETECTABLE WARNINGS



ACCESSIBILITY NOTES

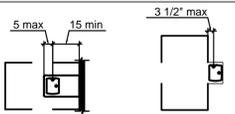
- THE BUILDING, SITE AND FACILITIES SHALL BE DESIGNED AND CONSTRUCTED TO BE ACCESSIBLE IN ACCORDANCE WITH THE MOST RECENT UPDATES TO THE 2008 EDITION OF THE NEW YORK CITY BUILDING CODE AND WITH ICC A117.1 2003 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
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- FOR COMMERCIAL PROJECTS, ACCESSIBLE FEATURES SHALL MEET OR EXCEED THE MOST PRESCRIPTIVE REQUIREMENTS OF EITHER THE NYC BUILDING CODE OR THE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN, AS PUBLISHED BY THE DEPARTMENT OF JUSTICE.

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PLUMBING ELEMENTS AND FACILITIES

602 DRINKING FOUNTAINS

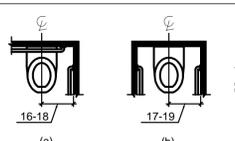


(a) Forward Approach (b) Parallel Approach
Fig. 602.5 Drinking Fountain Spout Location

603 TOILET AND BATHING ROOMS

A TURNING SPACE SHALL BE PROVIDED WITHIN THE ROOM... CLEAR FLOOR SPACES, CLEARANCES AT FIXTURES AND TURNING SPACES SHALL BE PERMITTED TO OVERLAP... DOORS SHALL NOT SWING INTO THE CLEAR FLOOR SPACE OR CLEARANCE FOR ANY FIXTURE...

604 WATER CLOSETS AND TOILET COMPARTMENTS



(a) wheelchair accessible water closets (b) ambulatory accessible water closets
Fig. 604.2 Water Closet Location

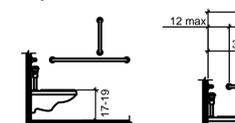


Fig. 604.5.1 Side Wall Grab Bar for Water Closet

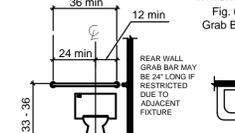


Fig. 604.5.2 Rear Wall Grab Bar for Water Closet

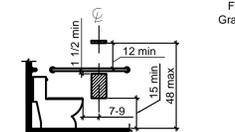


Fig. 604.5.3 Swing Up Grab Bar for Water Closet

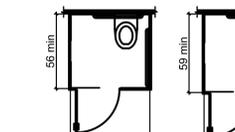


Fig. 604.7 Dispenser Outlet Location



Fig. 604.8.2 Wheelchair Accessible Toilet Compartments



Fig. 604.8.3 Wheelchair Accessible Compartment Doors

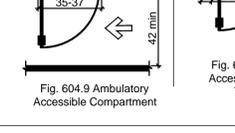
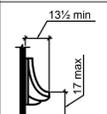
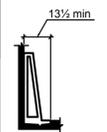


Fig. 604.9 Ambulatory Accessible Compartment

605 URINALS



(a) wall hung type
Fig. 605.2 Height of Urinals

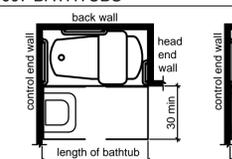


(b) stall type
Fig. 605.2 Height of Urinals

606 LAVATORIES AND SINKS

- A CLEAR FLOOR SPACE POSITIONED FOR FORWARD APPROACH SHALL BE PROVIDED, ALONG WITH KNEE AND TOE CLEARANCE (606.2).
- A PARALLEL APPROACH SHALL BE ALLOWED TO A KITCHEN SINK WHEN A COOK TOP OR CONVENTIONAL RANGE IS NOT PROVIDED (606.2).
- A PARALLEL APPROACH SHALL BE PERMITTED AT WET BARS (606.2).
- SINKS AND LAVATORIES SHALL BE 34" ABOVE FINISH FLOOR (606.3).

607 BATHTUBS



(a) without a permanent seat (b) with permanent seat
Fig. 607.2 Clearance for Bathtubs

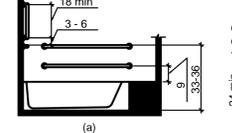


Fig. 607.4.1 Grab Bars for Bathtubs with Permanent Seats

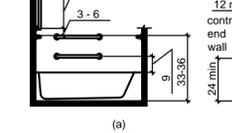


Fig. 607.4.2 Grab Bars for Bathtubs without Permanent Seats

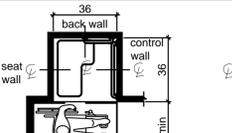


Fig. 608.2.1 Transfer Type Shower Compartment Size and Clearance (b) Fig. 608.2.2 Standard Roll-In Type Shower Compartment Size and Clearance

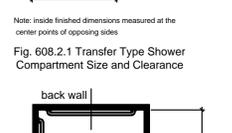


Fig. 608.3.1 Grab Bars in Standard Roll-In Type Showers

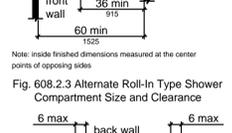


Fig. 608.3.2 Grab Bars in Alternate Roll-In Type Showers

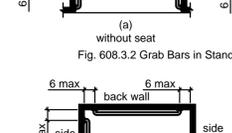


Fig. 608.3.3 Grab Bars in Transfer Type Showers



Fig. 608.5.1 Transfer Type Shower Control and Handshower Location

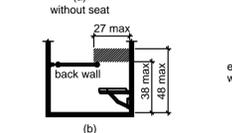


Fig. 608.5.2 Standard Roll-In Type Shower Control and Handshower Location

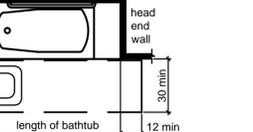


Fig. 608.5.3 Alternate Roll-In Type Shower Control and Handshower Location

609. GRAB BARS



(a) 1x2 (b) 4-8 lb perimeter (c) 15 min
Fig. 609.2 Size of Grab Bars (b) Fig. 609.3 Spacing of Grab Bars



(a) Removable In-Tub Seat (b) Permanent Seat
Fig. 610.2 Bathtub Seats

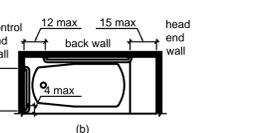
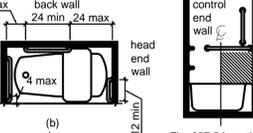


Fig. 610.3.1 Rectangular Shower Compartment (b) Fig. 610.3.2 L-Shaped Shower Compartment



(a) top loading (b) front loading
Fig. 611.4 Height of Laundry Equipment

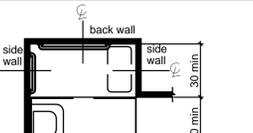


Fig. 804.2.1 Pass-Through Kitchen Clearance (b) Fig. 804.2.2 U-Shaped Kitchen Clearance



Typical Grab Bar Reinforcement Locations for Bathrooms with Future Grab Bars Between 33" - 36" AFF



Fig. 1003.1.1.3.1 Parallel Approach Bathtub in Type B Units - Option A Bathrooms (b) Fig. 1003.1.1.3.2 Forward Approach Bathtub in Type B Units - Option A Bathrooms

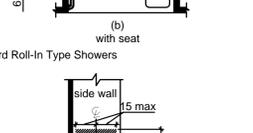


Fig. 1003.1.1.3.3 Transfer Type Shower Compartment in Type B Units



Fig. 1004.11.3.1.3.1 Parallel Approach Bathtub in Type B Units - Option A Bathrooms (b) Fig. 1004.11.3.1.3.2 Forward Approach Bathtub in Type B Units - Option A Bathrooms

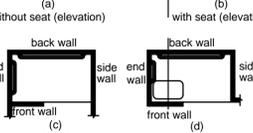


Fig. 1004.11.3.1.3.3 Transfer Type Shower Compartment in Type B Units



Fig. 1004.11.3.2.3.1 Bathtub Clearance in Type B Units - Option B Bathrooms

DWELLING UNITS AND SLEEPING UNITS

1002 ACCESSIBLE UNITS

THE ACCESSIBLE PRIMARY ENTRANCE SHALL BE ON AN ACCESSIBLE ROUTE AND SHALL NOT BE TO A BEDROOM (1002.2) ALL SPACES AND ELEMENTS THAT ARE PART OF THE UNIT SHALL BE CONNECTED BY AN ACCESSIBLE ROUTE WHICH SHALL NOT PASS THROUGH TOILET ROOMS, CLOSETS OR SIMILAR SPACES... UNFINISHED ATTICS AND BASEMENTS NEED NOT BE CONNECTED ON THE ACCESSIBLE ROUTE. (1002.3.1)

1003 TYPE A UNITS

THE ACCESSIBLE PRIMARY ENTRANCE SHALL BE ON AN ACCESSIBLE ROUTE AND SHALL NOT BE TO A BEDROOM (1003.2) ALL SPACES AND ELEMENTS THAT ARE PART OF THE UNIT SHALL BE CONNECTED BY AN ACCESSIBLE ROUTE WHICH SHALL NOT PASS THROUGH TOILET ROOMS, CLOSETS OR SIMILAR SPACES... UNFINISHED ATTICS AND BASEMENTS ARE EXEMPT. (1003.3.1)

TOILET AND BATHING FACILITIES (1003.11) REINFORCEMENT FOR GRAB BARS AND SEATS SHALL BE PROVIDED AT BATHROOMS IN TYPE A UNITS (1003.11.1) AT LEAST ONE TOILET AND BATHING FACILITY IN THE UNIT SHALL PROVIDE AN ACCESSIBLE ARRANGEMENT OF WATER CLOSET, LAVATORY AND SHOWER AND/OR BATHTUB. (1003.11.3)

KITCHENS (1003.12) AT LEAST ONE SECTION OF COUNTER SHALL PROVIDE A MINIMUM 30" LONG WORK SURFACE WHICH IS 34" MAXIMUM ABOVE FINISH FLOOR... CLEAR FLOOR SPACE POSITIONED FOR FORWARD APPROACH SHALL BE PROVIDED ALONG WITH KNEE AND TOE CLEARANCE. (1003.12.1)

WINDOWS (1003.13) WHERE OPERABLE WINDOWS ARE PROVIDED, AT LEAST ONE WINDOW IN EACH SLEEPING, LIVING OR DINING SPACE SHALL HAVE OPERABLE PARTS COMPLYING WITH SECTION 1003.9. IN ADDITION, EVERY REQUIRED OPERABLE WINDOW SHALL HAVE OPERABLE PARTS COMPLYING WITH 1003.9

TYPE A UNIT - BATHROOMS ELEMENTS OF A TYPE A BATHROOM TURNING SPACE WITHIN THE ROOM CLEAR FLOOR SPACE OUTSIDE THE ARC OF THE DOOR MANUEVERING CLEARANCE AT DOOR WITH A POCKET DOOR OR AN OUTSWING DOOR... THE 7'-0" DIMENSION CAN BE REDUCED TO 4'-0" SUBJECT TO TOILET DIMENSIONS

1004 TYPE B UNITS THE ACCESSIBLE PRIMARY ENTRANCE SHALL BE ON AN ACCESSIBLE ROUTE AND SHALL NOT BE TO A BEDROOM (1004.2) ALL SPACES AND ELEMENTS THAT ARE PART OF THE UNIT SHALL BE CONNECTED BY AN ACCESSIBLE ROUTE WHICH SHALL NOT PASS THROUGH TOILET ROOMS, CLOSETS OR SIMILAR SPACES... ONE OF THE FOLLOWING NEED NOT BE MECHANICAL VENTILATION NEED NOT HAVE ACCESSIBLE OPERABLE WINDOWS

DOORS AND DOORWAYS (1004.5) WHERE EXTERIOR DECK, PATIO OR BALCONY SURFACES ARE IMPERVIOUS, THE EXTERIOR FINISHED FLOOR MAY BE MAXIMUM 1/2" ABOVE THE INTERIOR FINISH FLOOR. (1004.5.2) THE PRIMARY ENTRANCE DOOR NEED NOT INCLUDE MANUEVERING CLEARANCES ON THE INTERIOR (UPPER) SIDE OF THE DOOR. (1004.5.1)

TOILET AND BATHING FACILITIES (1004.11) REINFORCEMENT FOR GRAB BARS AND SEATS SHALL BE PROVIDED AT ALL BATHROOMS, HOWEVER, A POWDER ROOM NEED NOT PROVIDE IT IF IT IS NOT THE ONLY LAVATORY OR WATER CLOSET ON THE ACCESSIBLE LEVEL OF THE UNIT (1004.11.3.1)

OPTION B BATHROOMS FOR TYPE B UNITS (1004.11.3.2) OPTION B BATHROOMS SHALL COMPLY WITH ALL THE REQUIREMENTS FOR OPTION A BATHROOMS, WITH THE FOLLOWING ENHANCEMENTS: THE LAVATORY HEIGHT SHALL BE 34" MAXIMUM FROM THE FINISH FLOOR (1004.11.3.2.1.3) IF A BATHTUB IS PROVIDED, IT SHALL COMPLY WITH FIGURE 1004.11.3.2.3.1

SEE NYC BUILDING CODE CHAPTER 27 AND APPENDIX P FOR ACCESSIBILITY REQUIREMENTS OF TYPE B UNITS IN R-2 OCCUPANCY

NEW YORK CITY BUILDING CODE, ACCESSIBILITY PROVISIONS

NYC APPENDIX P, R-2 OCCUPANCY TOILET AND BATHING FACILITY REQUIREMENTS

1002.10 ALL APPENDIX P BATHROOMS SHALL BE ON AN ACCESSIBLE ROUTE 1002.20 LIGHTING CONTROLS, ELECTRICAL SWITCHES AND RECEPTACLE OUTLETS SHALL COMPLY WITH SECTION 309 OF ICC A117.1 PROVISION OF CLEAR FLOOR SPACE, WITHIN REACH RANGE, OPERATION WITHOUT GRASPING, TWISTING, ETC D

1002.30 DOORS SHALL COMPLY WITH NYC BC SECTION 1107.2.1 INCLUDING MANUEVERING CLEARANCES AS REQUIRED IN SECTION 404.2.3 OF ICC A117.1 SECTION 1003.5 EXCEPT 2 OF ICC A117.1 SHALL NOT APPLY. DOORS SHALL NOT SWING INTO THE CLEAR FLOOR SPACE OF ANY FIXTURE UNLESS: A CLEAR FLOOR SPACE IS PROVIDED WITHIN THE ROOM BEYOND THE ARC OF THE DOOR, OR THE DOOR AND FRAME ARE PREPARED FOR FUTURE REVERSIBILITY AND MANUEVERING CLEARANCES WILL BE ACHIEVED FOR THE REVERSED DOOR SWING

1002.40 CLEAR FLOOR SPACE AT FIXTURES MAY INCLUDE KNEE AND TOE CLEARANCE COMPLYING WITH SECTION 306 OF ICC A117.1 1002.60 CLEAR FLOOR SPACES AND CLEARANCES ARE PERMITTED TO OVERLAP 1002.65 LAVATORIES SHALL COMPLY WITH SECTION 606 OF ICC A117.1 CABINETS IS PERMITTED UNDER THE LAVATORY PROVIDED THE CABINETS CAN BE REMOVED WITHOUT REMOVAL OF THE LAVATORY. THE FLOOR FINISH EXTENDS UNDER THE CABINET AND THE WALLS BEHIND AND SURROUNDING THE CABINETS ARE FINISHED

1002.70 MIRRORS ABOVE LAVATORIES SHALL HAVE THEIR BOTTOM EDGE 40" AFFIRMED CABINETS OF PROVIDED SHALL INCLUDE AT LEAST ONE SHELF NO HIGHER THAN 48" AFF 1002.80 WATER CLOSETS SHALL BE POSITIONED WITH A WALL TO THE REAR AND ONE SIDE WITH THE CENTERLINE BETWEEN 16"-18" FROM THE SIDE WALL

1002.90 BATHTUBS SHALL COMPLY WITH 607 OF ICC A117.1 LAVATORIES ARE PERMITTED IN THE CLEARANCE PROVIDED BY 607.2 OF ICC A117.1 BATHUBS ARE NOT REQUIRED GRAB BARS REINFORCEMENT FOR FUTURE GRAB BARS SHALL BE PROVIDED IN ACCORDANCE WITH 607.4 OF ICC A117.1 SHOWERS SHALL COMPLY WITH SECTION 608 OF ICC A117.1 FOR SHOWERS OTHER THAN TRANSFER TYPE, COUNTER TOPS AND CABINETS SHALL BE PERMITTED AT THE CONTROL END OF THE CLEARANCE. PROVIDED THAT IT CAN BE REMOVED AND WALL-FLOOR FINISH EXTENDS UNDER AND BEHIND THE CABINETS

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NEW YORK CITY BUILDING CODE, ACCESSIBILITY PROVISIONS

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ZONING MAP
THE NEW YORK CITY PLANNING COMMISSION

Major Zoning Classifications:
The number(s) and/or letter(s) that follows an R, C or M District designation indicates use, bulk and other controls as described in the text of the Zoning Resolution.

- R - RESIDENTIAL DISTRICT
- C - COMMERCIAL DISTRICT
- M - MANUFACTURING DISTRICT

SPECIAL PURPOSE DISTRICT
The letter(s) within the shaded area designates the special purpose district as described in the text of the Zoning Resolution.

AREA(S) REZONED

Effective Date(s) of Rezoning:
10-11-2012 C 120226 ZMM

Special Requirements:
For a list of lots subject to CEQR environmental requirements, see APPENDIX C.
For a list of lots subject to "D" restrictive declarations, see APPENDIX D.
For Inclusionary Housing designated areas on this map, see APPENDIX F.

QTY MAP CHANGE(S):
▲ 6-01-2013 C 120156 MIM

MAP KEY

8b	8d	9b
12a	12c	13a
12b	12d	13b

ZONING MAP 12c

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NOTE: Zoning information as shown on this map is subject to change. For the most up-to-date zoning information for this map, visit the Zoning section of the Department of City Planning website: www.nyc.gov/dcp/zoning, or contact the Zoning Information Desk at (212) 720-3591.

NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

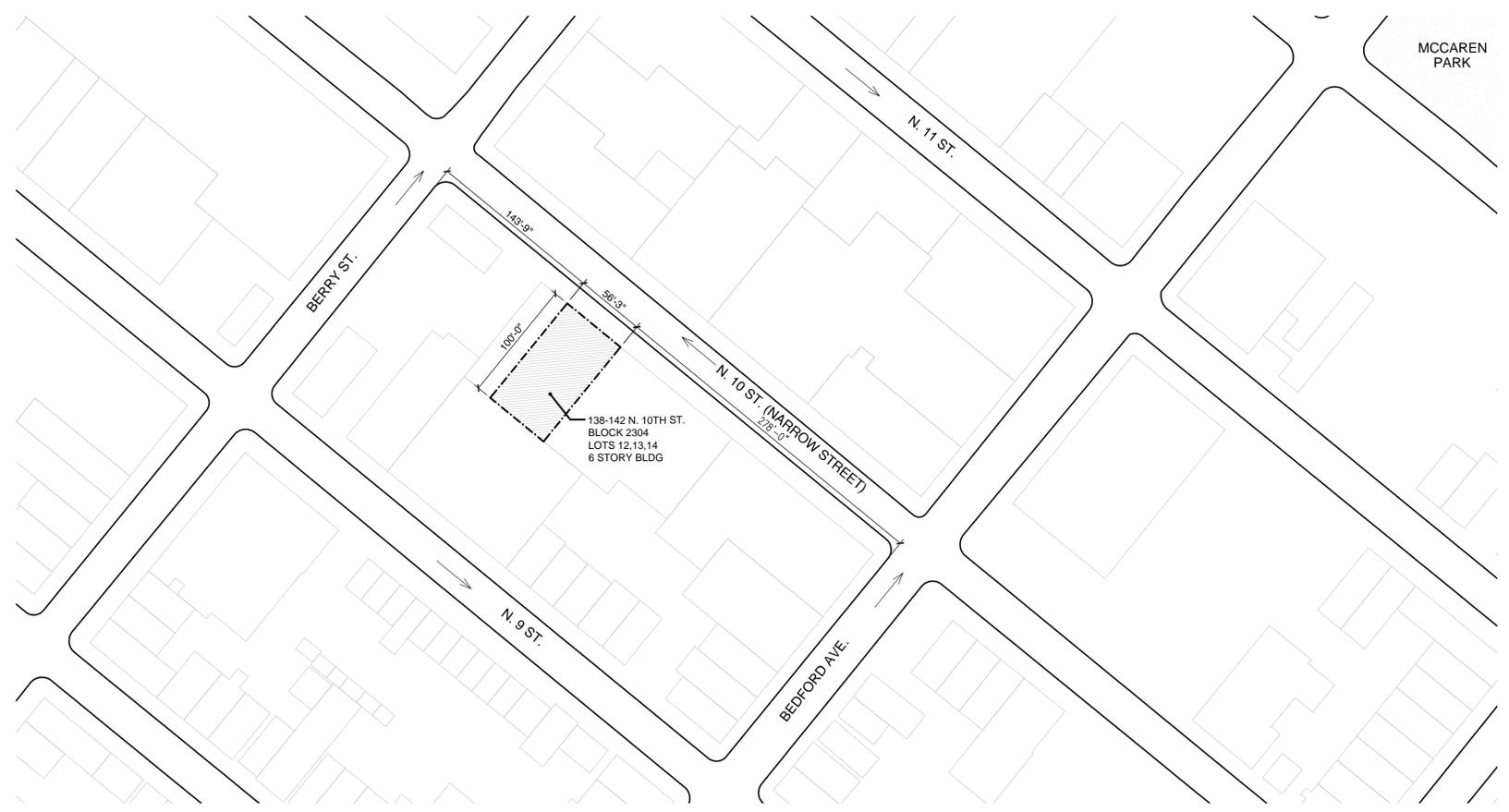
MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

1 SITE PLAN
3/32" = 1'-0"



2 PLOT PLAN
1/64" = 1'-0"

DECEMBER 01, 2014 FILING DOCUMENTS

REVISION	ISSUE	REMARKS
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FILING DOCUMENTS

OWNER/CLIENT:
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1407 BROADWAY, 41ST FLOOR
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PHONE: 212.812.1000

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MORRIS ADJMI ARCHITECTS
48 EAST 80TH STREET
NEW YORK, NY 10003
PHONE: 212.982.2020

MEFP:
SILKMAN ENGINEERING ASSOCIATES
545 EIGHTH AVENUE
NEW YORK, NY 10018
PHONE: 212.643.9088

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228 EAST 45TH STREET
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777 NINT AVENUE
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PHONE: 212.643.8016

SOE:
PNA ASSOCIATES, INC.
670 BERGEN BOULEVARD
RIDGEFIELD NJ 07871
PHONE: 201.241.2444 EXT. 1012

ACOUSTICAL:
SH ACOUSTICS LLC
10 HIGGINS DRIVE
MILFORD, CT 06460
PHONE: 203.877.8240

SURVEYOR:
LEONARD J. STRANDBERG & ASSOCIATES, P.C.
32 SMITH STREET
FREEPORT, NY 11520
PHONE: 516.378.2044/212.213.4200



DATE 1-Dec-14
SCALE AS NOTED
PLOT PLAN AND ZONING MAP

G-009.00

NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

DECEMBER 01, 2014 FILING DOCUMENTS

REVISION	ISSUE	REMARKS

FILING DOCUMENTS

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DATE 1-Dec-14
SCALE NTS
FLOOD ZONE MAP

G-010.00

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was New York Long Island State Plane FIPS ZONE 3104. The horizontal datum was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA NIMS512
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3182
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was provided in digital format by the Department of Information Technology and Telecommunication, City of New York (DoITT). This information was derived from digital orthophotos produced at a scale of 1:1,200 with 2-foot pixel resolution from photography dated April 2008.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

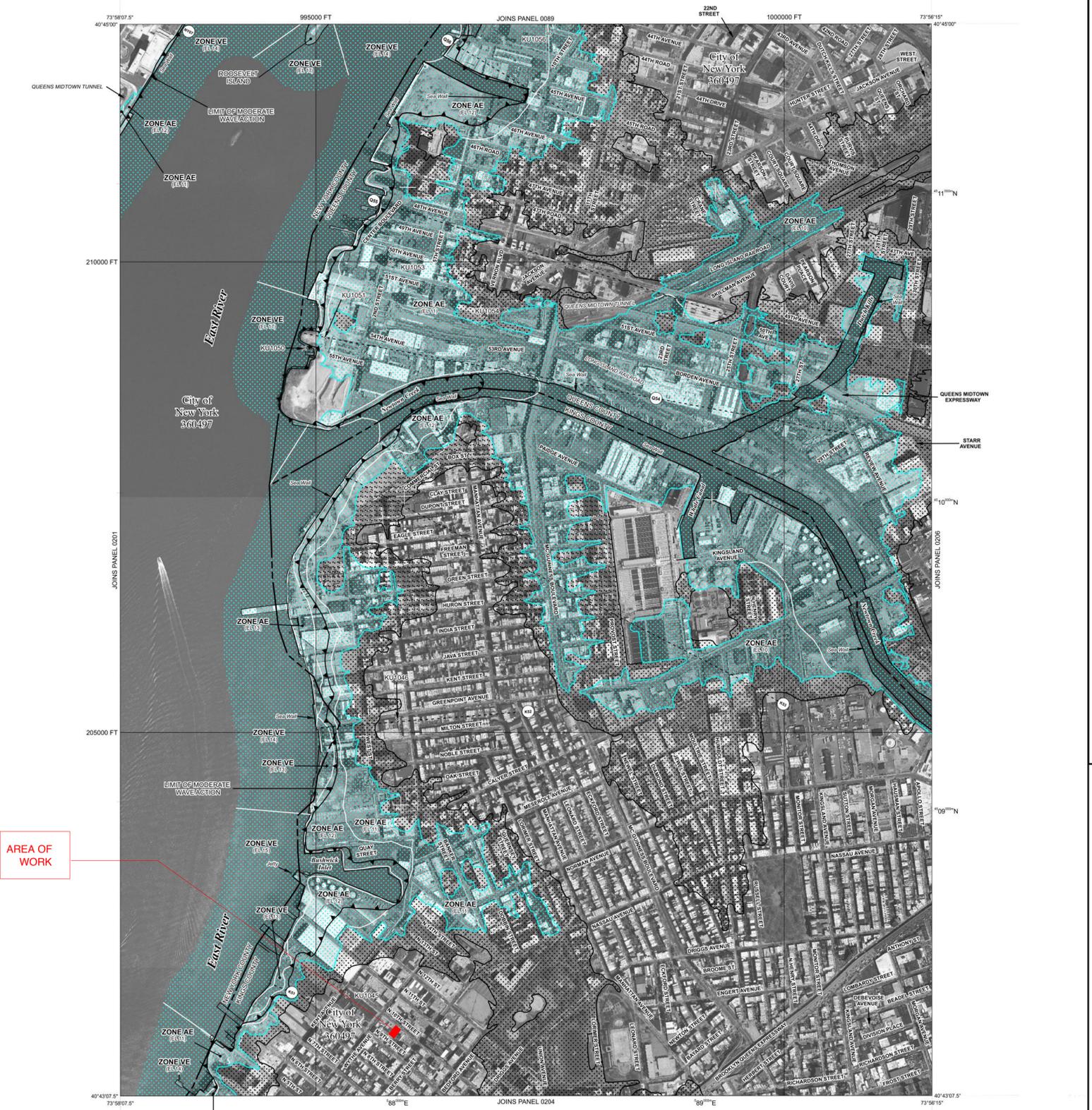
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

The **AE Zone** category has been divided by a **Limit of Moderate Wave Action (LMWA)**. The LMWA represents the approximate landward limit of the 1.5-foot breaking wave. The effects of wave hazards between the VE Zone and the LMWA (or between the shoreline and the LMWA for areas where VE Zones are not identified) will be similar to, but less severe than those in the VE Zone.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at <http://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange (FMIX) at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/mfp>.

AREA OF WORK



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, AVB, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently identified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE AVB Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood, areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
Limit of Moderate Wave Action
Base Flood Elevation line and value; elevation in feet*
Base Flood Elevation value where uniform within zone; elevation in feet

* Referenced to the North American Vertical Datum of 1988

○ Cross section line
○ Tract line
○ Culvert, Flume, Penstock or Aqueduct
○ Road or Railroad Bridge
○ Footbridge
○ Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
○ 100-meter Universal Transverse Mercator grid values, zone 18

600000 FT
5000-foot grid values: New York State Plane coordinate system, Long Island zone (FIPSZONE 3104), Lambert Conformal conic projection
Bench mark (see explanation in Notes to Users section of this FIRM report)

● M1.5
River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

INITIAL NFIP MAP DATE: June 28, 1974
FLOOD HAZARD BOUNDARY MAP REVISIONS: June 11, 1978
FLOOD INSURANCE RATE MAP EFFECTIVE: November 16, 1983
FLOOD INSURANCE RATE MAP REVISIONS:

For descriptions of revisions see Notice to Users page in the Flood Insurance Study report.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-9626.

MAP SCALE 1" = 500'
200 0 500 1000 FEET
150 0 150 300 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0202G

FIRM
FLOOD INSURANCE RATE MAP

CITY OF, NEW YORK
NEW YORK
BRONX, RICHMOND, NEW YORK,
QUEENS, AND KINGS COUNTIES

PANEL 202 OF 457
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS
COMMUNITY NUMBER PANEL SUFFIX
NEW YORK, CITY OF 360497 0202 G

PRELIMINARY
DECEMBER 5, 2013

The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 3604970202G
MAP REVISED

Federal Emergency Management Agency

NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

DECEMBER 01, 2014 FILING DOCUMENTS

REVISION ISSUE REMARKS

FILING DOCUMENTS

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NEW YORK, NY 10017
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CODE CONSULTANT:
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SOE:
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PHONE: 201.241.2444 EXT. 1012

ACOUSTICAL:
SH ACOUSTICS LLC
10 HIGGINS DRIVE
MILFORD, CT 06460
PHONE: 203.877.6340

SURVEYOR:
LEONARD J. STRANDBERG & ASSOCIATES, P.C.
82 SMITH STREET
FREEPORT, NY 11520
PHONE: 516.578.2044/212.213.4200



DATE 1-Dec-14

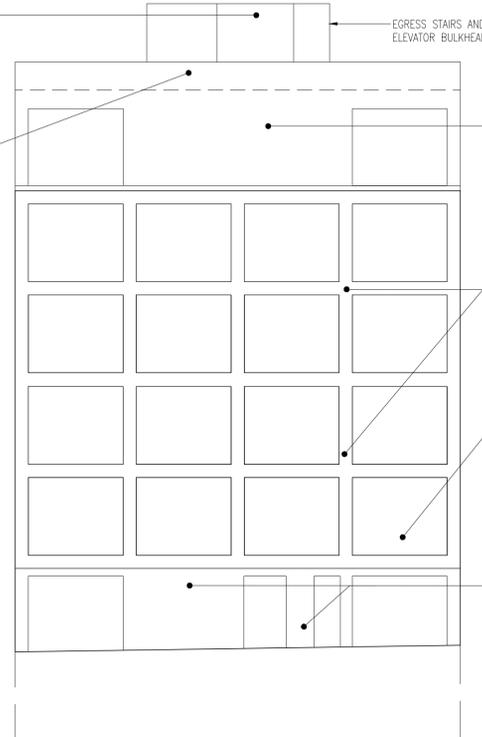
SCALE NTS

ENERGY CODE COMPLIANCE DIAGRAM

EN-001.00

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW5	CMU WALL W/RIGID INSULATION - STUCCO FINISH	10	0	248

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW6	PARAPET CMU WALL W/RIGID INSULATION - STUCCO FINISH	10	0	196



1 DIAGRAMATIC NORTH BUILDING ELEVATION
SCALE: NTS

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW4	CMU WALL W/RIGID AND BATT INSULATION - STUCCO FINISH	10	13	442

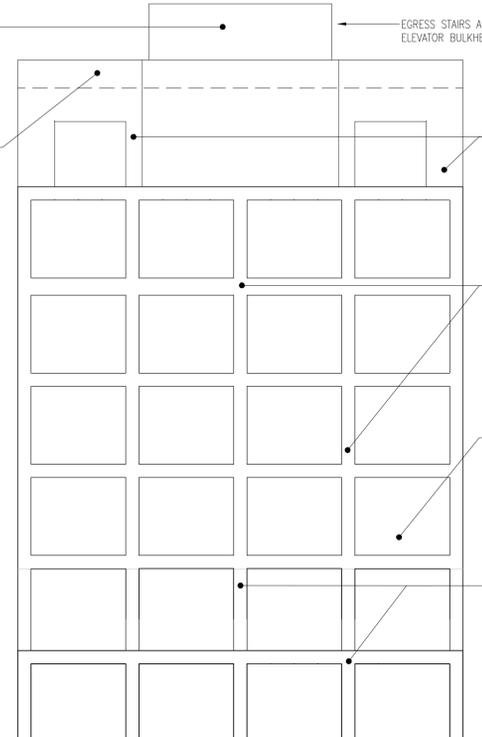
WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW2	BRICK WALL W/RIGID AND BATT INSULATION	10	13	808

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW1	THERMALLY BROKEN I.G. UNIT WINDOW WALL	2	0	2068

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW3	CONCRETE VENEER W/RIGID & BATT INSULATION	10	13	268

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW5	CMU WALL W/RIGID INSULATION - STUCCO FINISH	10	0	248

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW6	PARAPET CMU WALL W/RIGID INSULATION - STUCCO FINISH	10	0	196



2 DIAGRAMATIC SOUTH BUILDING ELEVATION
SCALE: NTS

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW8	6" STUD WALL W/RIGID AND BATT INSULATION	10	19	547

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW2	BRICK WALL W/RIGID AND BATT INSULATION	10	13	808

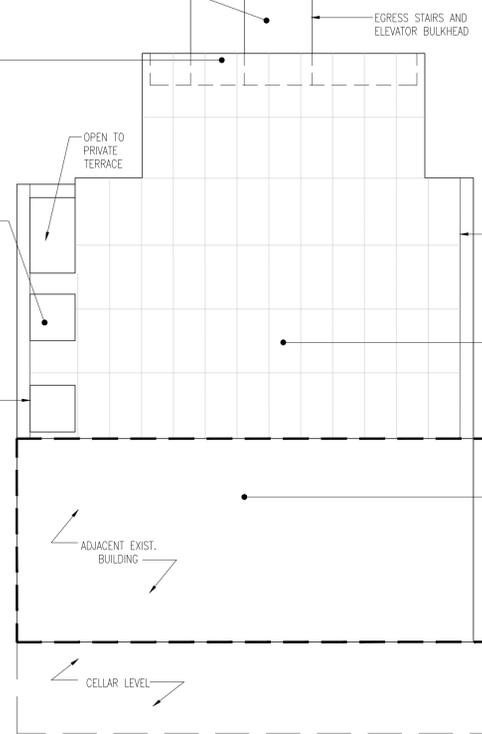
WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW1	THERMALLY BROKEN I.G. UNIT WINDOW WALL	2	0	839

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW3	CONCRETE VENEER W/RIGID & BATT INSULATION	10	13	279

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW5	CMU WALL W/RIGID INSULATION - STUCCO FINISH	10	0	168

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW6	PARAPET CMU WALL W/RIGID INSULATION - STUCCO FINISH	10	0	141

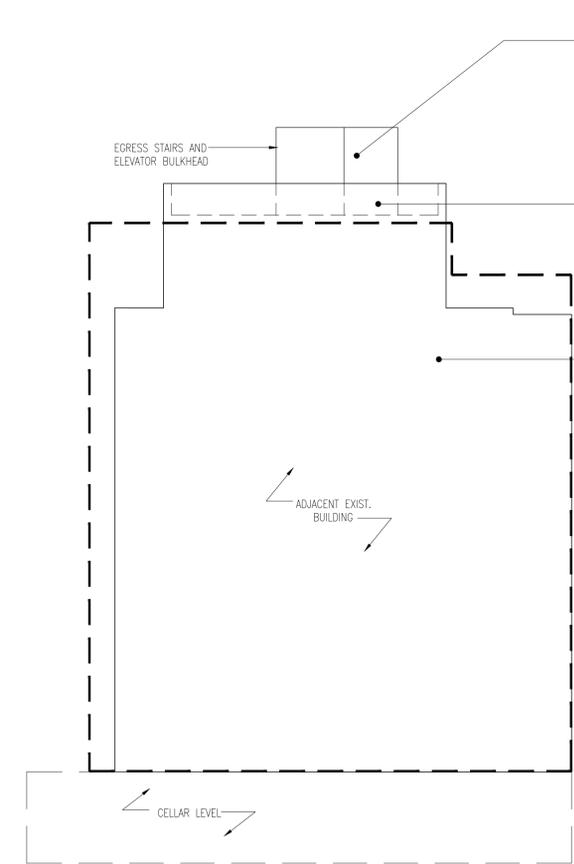
WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW1	THERMALLY BROKEN I.G. FIXED UNIT WINDOWS	2	0	66



3 DIAGRAMATIC WEST BUILDING ELEVATION
SCALE: NTS

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW4	CMU WALL W/RIGID AND BATT INSULATION - STUCCO FINISH	10	13	2101

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW7	CMU W/BATT INSULATION (@ ADJ. BLDG.)	0	13	1462



4 DIAGRAMATIC EAST BUILDING ELEVATION
SCALE: NTS

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW5	CMU WALL W/RIGID INSULATION - STUCCO FINISH	10	0	168

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW6	PARAPET CMU WALL W/RIGID INSULATION - STUCCO FINISH	10	0	141

WALL TYPE	WALL DESCRIPTION	CONTINUOUS INSULATION R-VALUE	CAVITY INSULATION R-VALUE	WALL AREA (SF)
EW7	CMU W/BATT INSULATION (@ ADJ. BLDG.)	0	13	3744

ZONING INFORMATION	
GENERAL SITE INFORMATION	
ADDRESS	138-142 N. 10TH STREET NEW YORK NY 11249
BLOCK	2304
LOT	12
ZONING MAP	12c
ZONING DISTRICT	R6-A, INCLUSIONARY HOUSING AREA
SPECIAL DISTRICT	NO
HISTORIC DISTRICT	NO
LOT AREA	5,625 SF
FAR	2.7
MAX FLOOR AREA DESIGNATION	15,187.5 SF LITTLE E - NOISE, HAZARDOUS MATERIALS
STREET FRONTAGE	N. 10TH ST. (NARROW - 30' WIDE)
FLOOD HAZARD	NO
COASTAL ZONE	NO

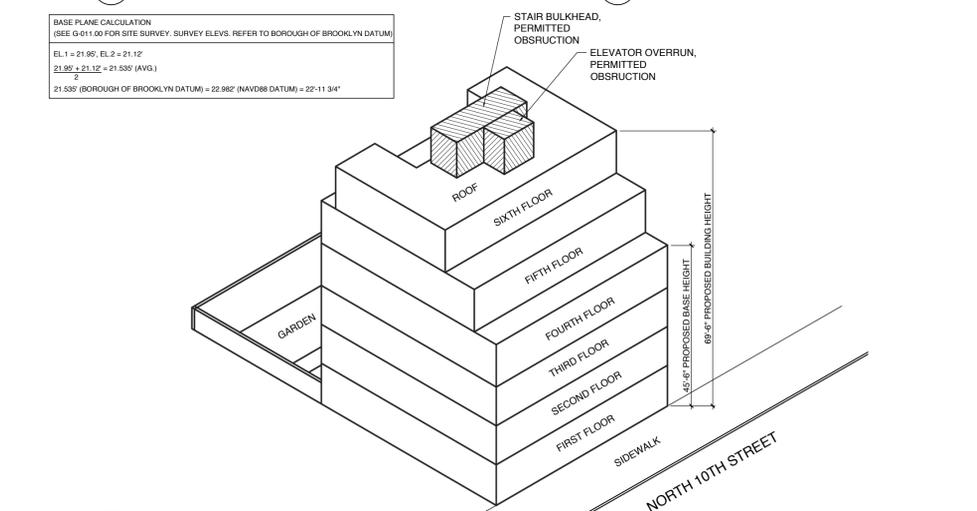
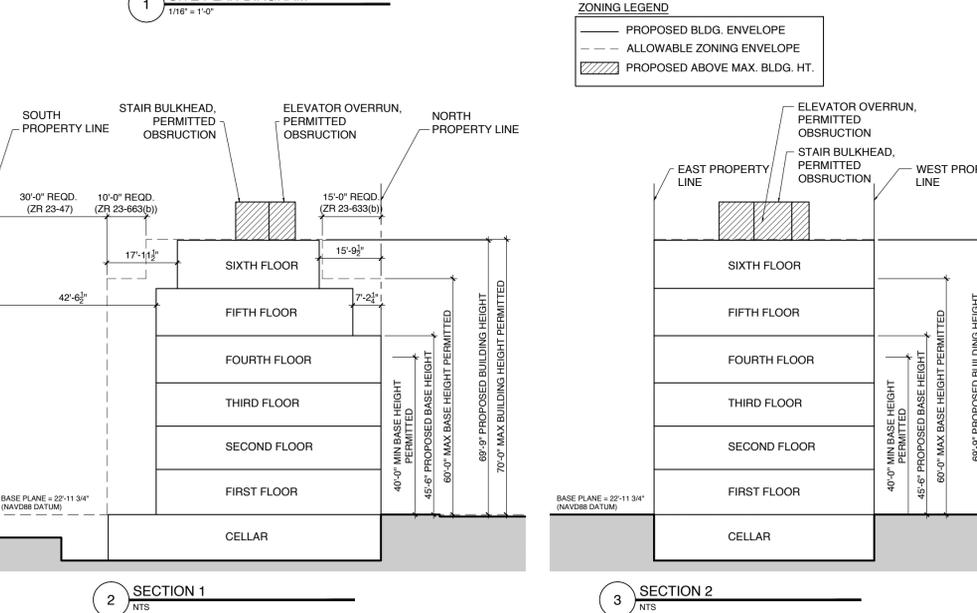
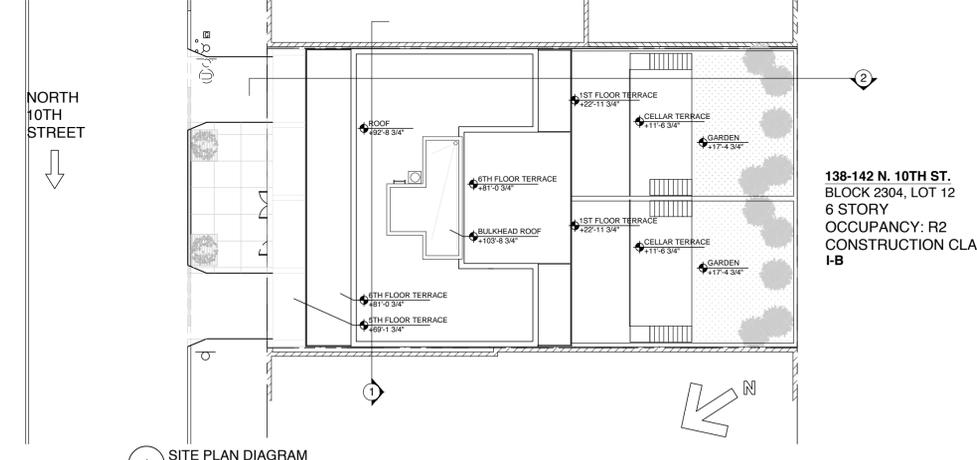
ZONING SECTIONS	ITEM	REQUIRED / PERMITTED	PROPOSED	COMPLIANCE
USE REGULATIONS				
ZR 22-00	USE GROUPS PERMITTED IN RESIDENTIAL DISTRICTS	USE GROUPS 1, 2, 3, 4	USE GROUP 2: RESIDENTIAL AND ACCESSORY USES	COMPLIES

ZONING SECTIONS	ITEM	REQUIRED / PERMITTED	PROPOSED	COMPLIANCE
BULK REGULATIONS				
ZR 23-011	APPLICATION OF QUALITY HOUSING BULK	IN R6A, R6B, R7A, R7B, R7D, R7X, R8A, R8B, R8X, R9A, R9D, R9X, R10A OR R10X DISTRICTS, ANY #BUILDING OR OTHER STRUCTURE# SHALL COMPLY WITH THE APPLICABLE DISTRICT #BULK# REGULATIONS SET FORTH IN THIS CHAPTER AND ANY #BUILDING# CONTAINING #RESIDENCES# SHALL ALSO COMPLY WITH THE REQUIREMENTS OF ARTICLE II, CHAPTER 8 (QUALITY HOUSING PROGRAM).	PERTINENT QUALITY HOUSING REGULATIONS APPLIED TO WORK DESCRIBED IN THIS APPLICATION	COMPLIES
ZR 28-21	MIN. SIZE OF DWELLING UNIT	400 SQ. FT. MIN. DWELLING UNIT SIZE	SMALLEST DWELLING UNIT = 1,220 SF	COMPLIES
ZR 28-22	WINDOWS	ALL WINDOWS TO BE DOUBLE GLAZED	ALL WINDOWS WILL BE DOUBLE GLAZED	COMPLIES
ZR 28-23	REFUSE STORAGE AND DISPOSAL	12 SQ. FT. MIN. REFUSE STORAGE AND DISPOSAL ROOM EACH FLOOR. 12 SQ. FT. PER ROOM MAY BE EXCLUDED FROM ZFA.	12 SQ. FT. MIN. REFUSE STORAGE AND DISPOSAL ROOM PROVIDED EACH FLOOR	COMPLIES
ZR 28-24	LAUNDRY FACILITIES	FLOOR AREA DEDUCTION FOR LAUNDRY FACILITIES	NOT USED	COMPLIES
ZR 28-25	DAYLIGHT IN CORRIDORS	FLOOR AREA DEDUCTION FOR DAYLIGHT IN CORRIDORS	NOT USED	COMPLIES
ZR 28-31	RECREATION SPACE	MIN. AREA OF RECREATION SPACE = 3.3% OF RESIDENTIAL FLOOR AREA. MIN. DIMENSION = 15 FT. MIN. AREA = 225 SQ. FT. (OUTDOOR) OPEN TO SKY	TOTAL RESIDENTIAL FLOOR AREA = 14,922 SQ. FT. 3.3% OF 14,922 = 492.4 SQ. FT. OUTDOOR RECREATION SPACE PROVIDED: AREA = 502 SQ. FT. MIN. DIMENSION = 20'-4" OPEN TO SKY.	COMPLIES
ZR 28-33	PLANTINGS	AREA OF ZONING LOT BETWEEN AND STREET WALL AND STREET LINE SHALL BE PLANTED AT GROUND LEVEL	STREET WALL LOCATED AT STREET LINE	COMPLIES
ZR 28-41	DENSITY PER CORRIDOR	IF LESS THAN 8 DWELLING UNITS ARE SERVED PER CORRIDOR, 50% OF THE CORRIDOR AREA MAY BE EXCLUDED FROM THE DEFINITION OF FLOOR AREA	ALL CORRIDORS SERVE LESS THAN 8 DWELLING UNITS. 50% OF CORRIDOR AREA DEDUCTED AT EACH FLOOR.	COMPLIES
ZR 28-50	PARKING	AS PER ZR 28-50	PROVIDED PARKING SPACES MEET ALL REQUIREMENTS	COMPLIES
ZR 23-952	BASE F.A.R. FOR INCLUSIONARY HOUSING DESIGNATED AREA	BASE F.A.R. (R6A) = 2.7 (AS PER TABLE)	14,922 SF (PROPOSED TOTAL SF) / 5,625 SF (LOT AREA) = 2.65 F.A.R.	COMPLIES
ZR 23-145	LOT COVERAGE	MAX. LOT COVERAGE = 65% (AS PER TABLE)	3,111.6 SF (GROSS AREA GROUND FLOOR) / 5,625 SF (LOT AREA) = 55%	COMPLIES
ZR 23-22	DENSITY	IN ALL DISTRICTS, AS INDICATED, THE MAXIMUM NUMBER OF #DWELLING UNITS# OR #ROOMING UNITS# SHALL EQUAL THE MAXIMUM #RESIDENTIAL FLOOR AREA# PERMITTED ON THE #ZONING LOT# DIVIDED BY THE APPLICABLE FACTOR IN THE FOLLOWING TABLE. R6-FACTOR FOR #DWELLING UNITS# = 680	15,187.5 SF (MAX. RESIDENTIAL FLOOR AREA PERMITTED) / #680 (FACTOR) = 22.3 MAX. NUMBER OF DWELLING UNITS. 10 DWELLING UNITS PROPOSED.	COMPLIES
ZR 23-45	MINIMUM REQUIRED FRONT YARDS	NONE REQUIRED IN R6 DISTRICTS	NONE PROVIDED	COMPLIES
ZR 23-46	MINIMUM REQUIRED SIDE YARDS	NONE REQUIRED IN R6 DISTRICTS	NONE PROVIDED	COMPLIES
ZR 23-47	MINIMUM REQUIRED REAR YARDS	MIN. REAR YARD = 30' IN R6 DISTRICTS	30' REAR YARD PROVIDED	COMPLIES
ZR 23-62	PERMITTED OBSTRUCTIONS	AS PER ZR 23-62	STAIR BULKHEAD AND ELEVATOR OVERRUN ABOVE MAX BLDG. HT OF 70', NOT WITHIN 10' OF STREET LINE.	COMPLIES
ZR 23-633(a)	STREET WALL LOCATION	NO CLOSER TO STREETLINE THAN ANY OTHER EXISTING BUILDING STREET WALL WITHIN 150' AND ON SAME BLOCK. NEED NOT BE FURTHER THAN 15' FROM STREET LINE.	ALL EXISTING BUILDING STREET WALLS WITHIN 150' AND ON SAME BLOCK ARE ON STREETLINE. PROPOSED STREET WALL LOCATED ON STREET LINE.	COMPLIES
ZR 23-633	MINIMUM BASE HEIGHT	MINIMUM BASE HEIGHT = 40'	PROPOSED BASE HEIGHT = 45'-6"	COMPLIES
ZR 23-633	MAXIMUM BASE HEIGHT	MAXIMUM BASE HEIGHT = 60'	PROPOSED BASE HEIGHT = 45'-6"	COMPLIES
ZR 23-633	MAXIMUM BUILDING HEIGHT	MAXIMUM BUILDING HEIGHT = 70'	PROPOSED BUILDING HEIGHT = 69'-9"	COMPLIES
ZR 23-633(b)	SETBACK ABOVE MAXIMUM BASE HEIGHT	15' SETBACK REQUIRED ABOVE MAX. BASE HEIGHT (NARROW STREET)	SETBACK ABOVE MAXIMUM BASE HEIGHT = 15'-9 1/2"	COMPLIES
ZR 23-663(b)	REQUIRED REAR SETBACKS	NO PORTION OF A #BUILDING OR OTHER STRUCTURE# THAT EXCEEDS THE APPLICABLE MAXIMUM BASE HEIGHT SPECIFIED IN SECTION 23-633 SHALL BE NEARER TO A #REAR YARD LINE# THAN 10 FEET.	PORTION OF BUILDING ABOVE MAX. BASE HEIGHT (60') IS 17'-11 1/2" FROM REAR YARD LINE.	COMPLIES

ZONING SECTIONS	ITEM	REQUIRED / PERMITTED	PROPOSED	COMPLIANCE
PARKING AND BICYCLE STORAGE				
ZR 25-23	REQUIRED ACCESSORY OFF-STREET PARKING SPACES FOR RESIDENCES - GROUP PARKING FACILITIES	ACCESSORY OFF-STREET PARKING SPACES SHALL BE PROVIDED FOR 50% OF TOTAL RESIDENCES	ACCESSORY OFF-STREET PARKING REQUIREMENTS WAIVED AS PER ZR 25-261. 2 ACCESSORY OFF-STREET PARKING SPACES PROVIDED.	WAIVED
ZR 25-261	MAX. NUMBER OF SPACES WAIVED FOR DEVELOPMENTS OR ENLARGMENTS	IN R6 DISTRICTS, MAXIMUM OF 5 SPACES WAIVED.	3 SPACES WAIVED. 2 SPACES PROVIDED.	COMPLIES
ZR 25-811(a)	ENCLOSED BICYCLE PARKING SPACES	BICYCLE PARKING REQUIREMENTS SET FORTH IN TABLE SHALL BE WAIVED FOR BICYCLE PARKING SPACES THAT ARE ACCESSORY TO BUILDINGS CONTAINING 10 DWELLING UNITS OR LESS.	PROPOSED BUILDING CONTAINS 10 DWELLING UNITS; BICYCLE PARKING REQUIREMENTS WAIVED. NO BICYCLE PARKING PROVIDED.	COMPLIES

ZONING SECTIONS	ITEM	REQUIRED / PERMITTED	PROPOSED	COMPLIANCE
SPECIAL URBAN DESIGN GUIDELINES				
ZR 23-03	STREET TREE PLANTING	IN ACCORDANCE WITH APPLICABILITY REQUIREMENTS OF UNDERLYING DISTRICT REGULATIONS, ONE STREET TREE, PRE-EXISTING OR NEWLY PLANTED, SHALL BE PROVIDED FOR EVERY 25 FEET OF STREET FRONTAGE OF THE ZONING LOT. FRACTIONS EQUAL TO OR GREATER THAN ONE-HALF RESULTING FROM THIS CALCULATION SHALL BE CONSIDERED ONE TREE. SUCH TREE SHALL BE PLANTED AT APPROXIMATELY EQUAL INTERVALS ALONG THE ENTIRE LENGTH OF THE CURB OF THE STREET ADJACENT TO THE ZONING LOT.	TOTAL FRONTAGE = 56'-3" 56'-3" / 25'-0" = 2.25 3 TREES REQUIRED 3 TREES PROVIDED	COMPLIES

ZONING AREA CALCULATIONS									
FLOOR	GFA	LOT COVERAGE	DEDUCTIONS (SEE Z-002.00)						ZONING FLOOR AREA
			MECH.	PARKING	DENSITY ON CORRIDOR (50%)	WALL THICK.	OPEN TO BELOW	REFUSE STORAGE	
CELLAR	3,819.4								0.0
1	3,111.6	55%	24.1	600	70	110.8	99.5	12	2,195.2
2	3,108.4	55%	42.7		49.5	81.4		12	2,922.8
3	3,108.4	55%	42.7		49.5	81.4		12	2,922.8
4	3,108.4	55%	42.7		49.5	81.4		12	2,922.8
5	2,706.0	48%	24.1		49.5	72		12	2,548.4
6	1,616.5	29%	13.6		62	119		12	1,409.9
ROOF	50.0	1%							0.0
TOTAL	20,628.7	56%	189.9	600.0	330.0	546.0	99.5	72.0	14,921.9



NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

138-142 N. 10TH ST.
BLOCK 2304, LOT 12
6 STORY
OCCUPANCY: R2
CONSTRUCTION CLASS:
I-B

DECEMBER 01, 2014 FILING DOCUMENTS

REVISION ISSUE REMARKS

FILING DOCUMENTS

OWNER/CLIENT: REDFORD ACQUISITIONS, LLC
1407 BROADWAY, 41ST FLOOR
NEW YORK, NY 10018
PHONE: 212.812.1000

ARCHITECT: MORRIS ADJMI ARCHITECTS
45 EAST 60TH STREET
NEW YORK, NY 10018
PHONE: 212.643.9008

MEPP: SILKMAN ENGINEERING ASSOCIATES
545 EIGHTH AVENUE
NEW YORK, NY 10018
PHONE: 212.643.9008

STRUCTURAL: NSR
208 EAST 45TH STREET
3RD FLOOR
NEW YORK, NY 10017
PHONE: 212.887.9888

CODE CONSULTANT: RELIABLE EXPEDITING INC.
777 KEN AVENUE
SUITE 212
BROOKLYN, NY 11205
PHONE: 212.643.8016

SOE: FNA ASSOCIATES, INC.
670 BERGEN BOULEVARD
RIDGEFIELD NJ 07081
PHONE: 201.241.2444 EXT. 1012

ACUSTICAL: SH ACUSTICS LLC
10 HIGGINS DRIVE
MILFORD, CT 06460
PHONE: 203.877.6240

SURVEYOR: LEONARD J. STRANDBERG & ASSOCIATES, P.C.
32 SMITH STREET
FREEPORT, NY 11520
PHONE: 516.578.2044/212.213.4000



DATE 1-Dec-14
SCALE AS NOTED
ZONING INFORMATION

Z-001.00

NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

DECEMBER 01, 2014 FILING DOCUMENTS

REVISION ISSUE REMARKS

FILING DOCUMENTS

OWNER/CLIENT:
BEDFORD ACQUISITIONS, LLC
1407 BROADWAY, 41ST FLOOR
NEW YORK, NY 10018
PHONE: 212.812.1000

ARCHITECT:
MORRIS ADJMI ARCHITECTS
45 EAST 50TH STREET
NEW YORK, NY 10023
PHONE: 212.982.2020

MEFP:
SILKMAN ENGINEERING
ASSOCIATES
545 EIGHTH AVENUE
NEW YORK, NY 10018
PHONE: 212.543.9208

STRUCTURAL:
NSFP
228 EAST 45TH STREET
3RD FLOOR
NEW YORK, NY 10017
PHONE: 212.887.9888

CODE CONSULTANT:
RELIABLE EXPEDITING INC.
777 KEN AVENUE
SUITE 212
BROOKLYN, NY 11205
PHONE: 212.643.8016

SOE:
FNA ASSOCIATES, INC.
670 BERGEN BOULEVARD
RIDGEFIELD NJ 07083
PHONE: 201.241.2444 EXT. 1012

ACOUSTICAL:
SH ACOUSTICS LLC
10 HIGGINS DRIVE
MILFORD, CT 06460
PHONE: 203.877.6340

SURVEYOR:
LEONARD J. STRANDBERG &
ASSOCIATES, P.C.
32 SMITH STREET
FREEPORT, NY, 11520
PHONE: 516.378.2044/212.213.4300

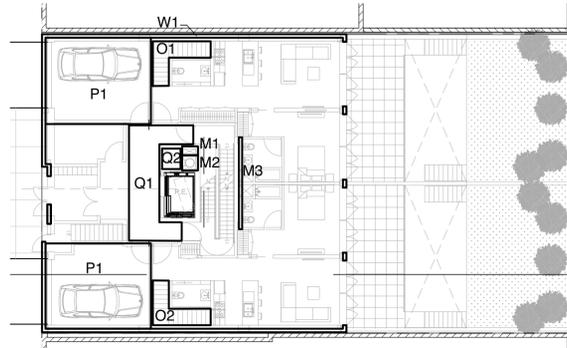


DATE 2014-01-12

SCALE NTS

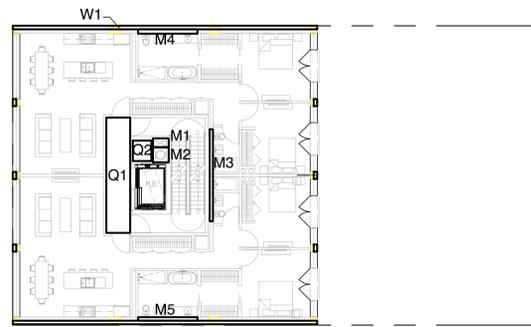
ZONING DEDUCTIONS

Z-002.00



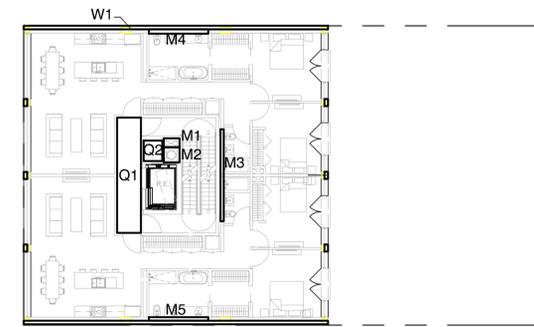
1 FIRST FLOOR

GROSS SQUARE FOOTAGE	3,111.6 SF
DEDUCTIONS	
MECHANICAL DEDUCT	
M1	5.0 SF
M2	8.6 SF
M3	10.5 SF
GENERAL	
P1 PARKING	300 SF
P2 PARKING	300 SF
O1 OPEN TO BELOW	49.75 SF
O2 OPEN TO BELOW	49.75 SF
W1 EXT. WALL THICKNESS	110.8 SF
QUALITY HOUSING	
Q1 DENSITY ON CORRIDOR	70SF
Q2 REFUSE STORAGE	12SF
TOTAL DEDUCTIONS	916.4 SF
NET ZONING SQUARE FOOTAGE	2,195.2 SF



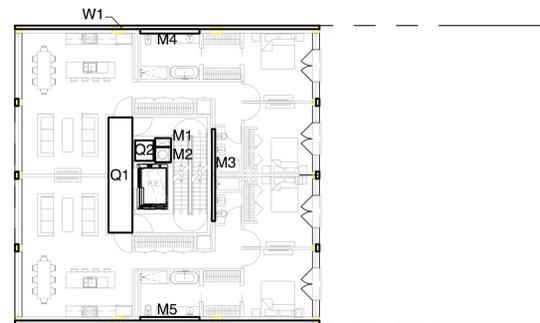
2 SECOND FLOOR

GROSS SQUARE FOOTAGE	3,108.4 SF
DEDUCTIONS	
MECHANICAL DEDUCT	
M1	5.0 SF
M2	8.6 SF
M3	10.5 SF
M4	9.3 SF
M5	9.3 SF
GENERAL	
W1 EXT. WALL THICKNESS	81.4 SF
QUALITY HOUSING	
Q1 DENSITY ON CORRIDOR	49.5 SF
Q2 REFUSE STORAGE	12 SF
TOTAL DEDUCTIONS	185.6 SF
NET ZONING SQUARE FOOTAGE	2,922.8 SF



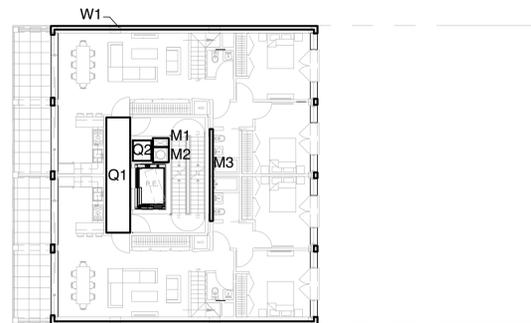
3 THIRD FLOOR

GROSS SQUARE FOOTAGE	3,108.4 SF
DEDUCTIONS	
MECHANICAL DEDUCT	
M1	5.0 SF
M2	8.6 SF
M3	10.5 SF
M4	9.3 SF
M5	9.3 SF
GENERAL	
W1 EXT. WALL THICKNESS	81.4 SF
QUALITY HOUSING	
Q1 DENSITY ON CORRIDOR	49.5 SF
Q2 REFUSE STORAGE	12 SF
TOTAL DEDUCTIONS	185.6 SF
NET ZONING SQUARE FOOTAGE	2,922.8 SF



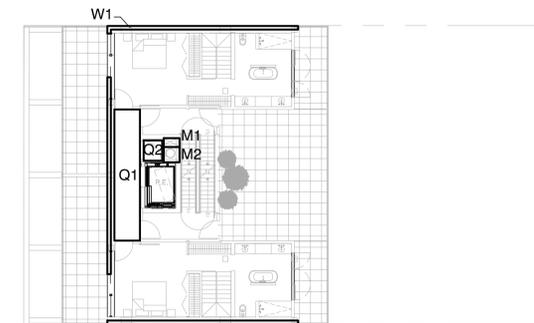
4 FOURTH FLOOR

GROSS SQUARE FOOTAGE	3,108.4 SF
DEDUCTIONS	
MECHANICAL DEDUCT	
M1	5.0 SF
M2	8.6 SF
M3	10.5 SF
M4	9.3 SF
M5	9.3 SF
GENERAL	
W1 EXT. WALL THICKNESS	81.4 SF
QUALITY HOUSING	
Q1 DENSITY ON CORRIDOR	49.5 SF
Q2 REFUSE STORAGE	12 SF
TOTAL DEDUCTIONS	185.6 SF
NET ZONING SQUARE FOOTAGE	2,922.8 SF



5 FIFTH FLOOR

GROSS SQUARE FOOTAGE	2,706.0 SF
DEDUCTIONS	
MECHANICAL DEDUCT	
M1	5.0 SF
M2	8.6 SF
M3	10.5 SF
GENERAL	
W1 EXT. WALL THICKNESS	72 SF
QUALITY HOUSING	
Q1 DENSITY ON CORRIDOR	49.5 SF
Q2 REFUSE STORAGE	12 SF
TOTAL DEDUCTIONS	157.6 SF
NET ZONING SQUARE FOOTAGE	2,548.4 SF



6 SIXTH FLOOR

GROSS SQUARE FOOTAGE	1,616.5 SF
DEDUCTIONS	
MECHANICAL DEDUCT	
M1	5.0 SF
M2	8.6 SF
GENERAL	
W1 EXT. WALL THICKNESS	119 SF
QUALITY HOUSING	
Q1 DENSITY ON CORRIDOR	62 SF
Q2 REFUSE STORAGE	12 SF
TOTAL DEDUCTIONS	206.6 SF
NET ZONING SQUARE FOOTAGE	1,409.9 SF

NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

DECEMBER 01, 2014 FILING DOCUMENTS

REVISION	ISSUE	REMARKS

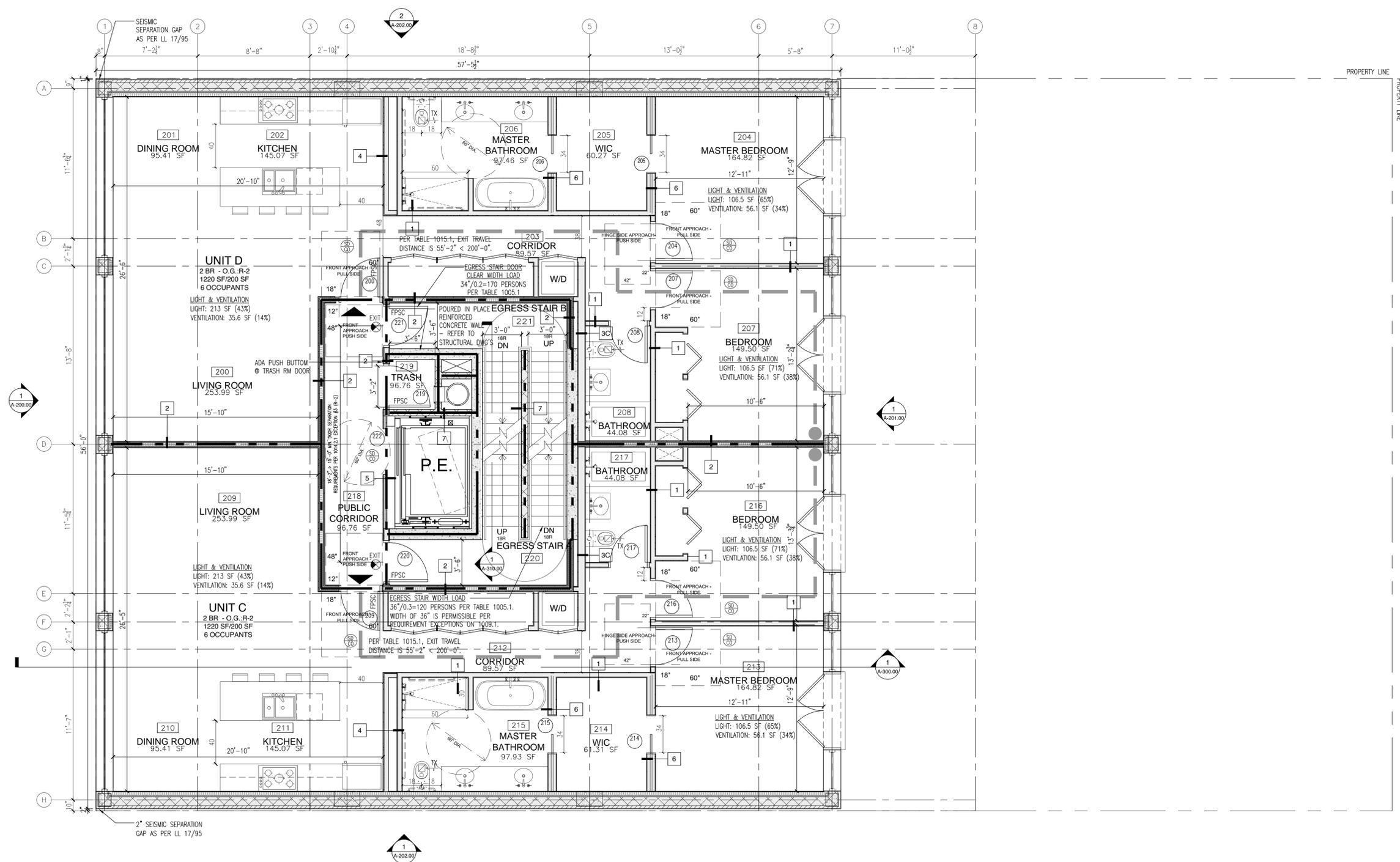
FILING DOCUMENTS

<p>OWNER/CLIENT: REDFORD ACQUISITIONS, LLC 1407 BROADWAY, 41ST FLOOR NEW YORK, NY 10018 PHONE: 212.812.1000</p> <p>ARCHITECT: MORRIS ADJMI ARCHITECTS 45 EAST 50TH STREET NEW YORK, NY 10023 PHONE: 212.982.2020</p> <p>MEFP: SILKOWAN ENGINEERING ASSOCIATES 545 EIGHTH AVENUE NEW YORK, NY 10018 PHONE: 212.643.9088</p> <p>STRUCTURAL: NSP 228 EAST 45TH STREET 3RD FLOOR NEW YORK, NY 10017 PHONE: 212.887.9888</p>	<p>CODE CONSULTANT: RELIABLE EXPEDITING INC. 777 KEN AVENUE SUITE 212 BROOKLYN, NY 11205 PHONE: 212.643.8016</p> <p>SOE: FNA ASSOCIATES, INC. 670 BERGEN BOULEVARD ROCKEFIELD NJ 07867 PHONE: 201.241.2444 EXT. 1012</p> <p>ACOUSTICAL: SH ACOUSTICS LLC 10 HIGGINS DRIVE MILFORD, CT 06460 PHONE: 203.877.6340</p> <p>SURVEYOR: LEONARD J. STRANDBERG & ASSOCIATES, P.C. 32 SMITH STREET FREEPORT, NY 11520 PHONE: 516.578.2044/212.213.4200</p>
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DATE 1-Dec-14
SCALE 1/4" = 1'-0"
SECOND FLOOR PLAN

A-102.00



NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

DECEMBER 01, 2014 FILING DOCUMENTS

REVISION	ISSUE	REMARKS

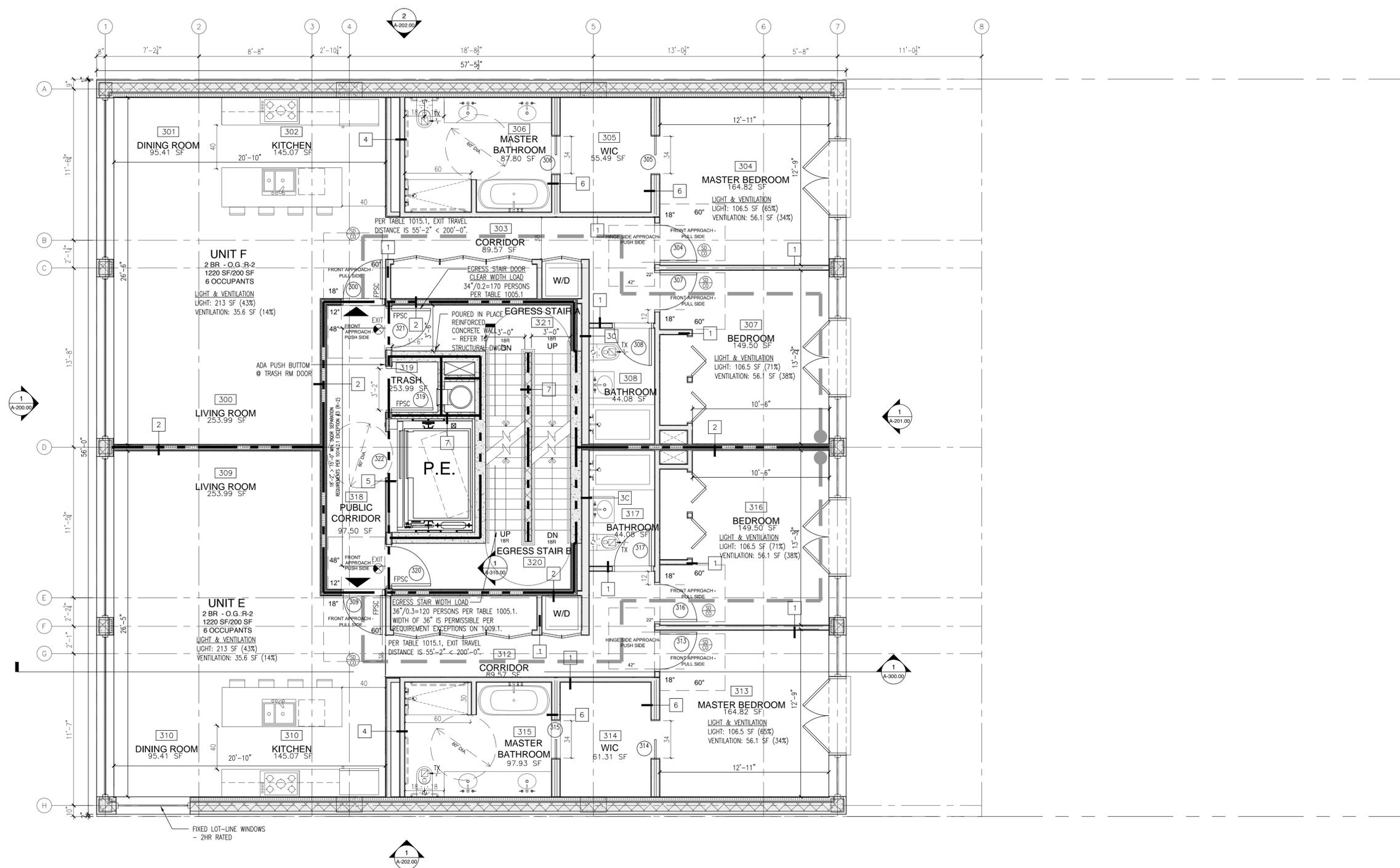
FILING DOCUMENTS

<p>OWNER/CLIENT: REDFORD ACQUISITIONS, LLC 1407 BROADWAY, 41ST FLOOR NEW YORK, NY 10018 PHONE: 212.812.1000</p> <p>ARCHITECT: MORRIS ADJMI ARCHITECTS 45 EAST 50TH STREET NEW YORK, NY 10023 PHONE: 212.982.2020</p> <p>MEFP: SILKOWAN ENGINEERING ASSOCIATES 545 EIGHTH AVENUE NEW YORK, NY 10018 PHONE: 212.643.9088</p> <p>STRUCTURAL: NSP 228 EAST 45TH STREET 3RD FLOOR NEW YORK, NY 10017 PHONE: 212.887.9888</p>	<p>CODE CONSULTANT: RELIABLE EXPEDITING INC. 777 KENT AVENUE SUITE 212 BROOKLYN, NY 11205 PHONE: 212.643.8016</p> <p>SOE: FNA ASSOCIATES, INC. 670 BERGEN BOULEVARD RIDGEFIELD NJ 07083 PHONE: 201.241.2444 EXT. 1012</p> <p>ACOUSTICAL: SH ACOUSTICS LLC 10 HIGGINS DRIVE MILFORD, CT 06460 PHONE: 203.877.6240</p> <p>SURVEYOR: LEONARD J. STRANDBERG & ASSOCIATES, P.C. 32 SMITH STREET FREEPORT, NY 11560 PHONE: 516.378.2044/212.213.4200</p>
---	--



DATE 1-Dec-14
SCALE 1/4" = 1'-0"
THIRD FLOOR PLAN

A-103.00



NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

DECEMBER 01, 2014 FILING DOCUMENTS

REVISION ISSUE REMARKS

FILING DOCUMENTS

OWNER/CLIENT:
REDFORD ACQUISITIONS, LLC
1407 BROADWAY, 41ST FLOOR
NEW YORK, NY 10018
PHONE: 212.812.1000

ARCHITECT:
MORRIS ADJMI ARCHITECTS
45 EAST 50TH STREET
NEW YORK, NY 10003
PHONE: 212.982.2020

MEFP:
SILKOWAN ENGINEERING
ASSOCIATES
545 EIGHTH AVENUE
NEW YORK, NY 10018
PHONE: 212.643.9088

STRUCTURAL:
NSRF
228 EAST 45TH STREET
3RD FLOOR
NEW YORK, NY 10017
PHONE: 212.887.9888

CODE CONSULTANT:
RELIABLE EXPEDITING INC.
777 KENY AVENUE
SUITE 212
BROOKLYN, NY 11205
PHONE: 212.643.8016

SOE:
FNA ASSOCIATES, INC.
670 BERGEN BOULEVARD
RIDGEFIELD NJ 07083
PHONE: 201.241.2444 EXT. 1012

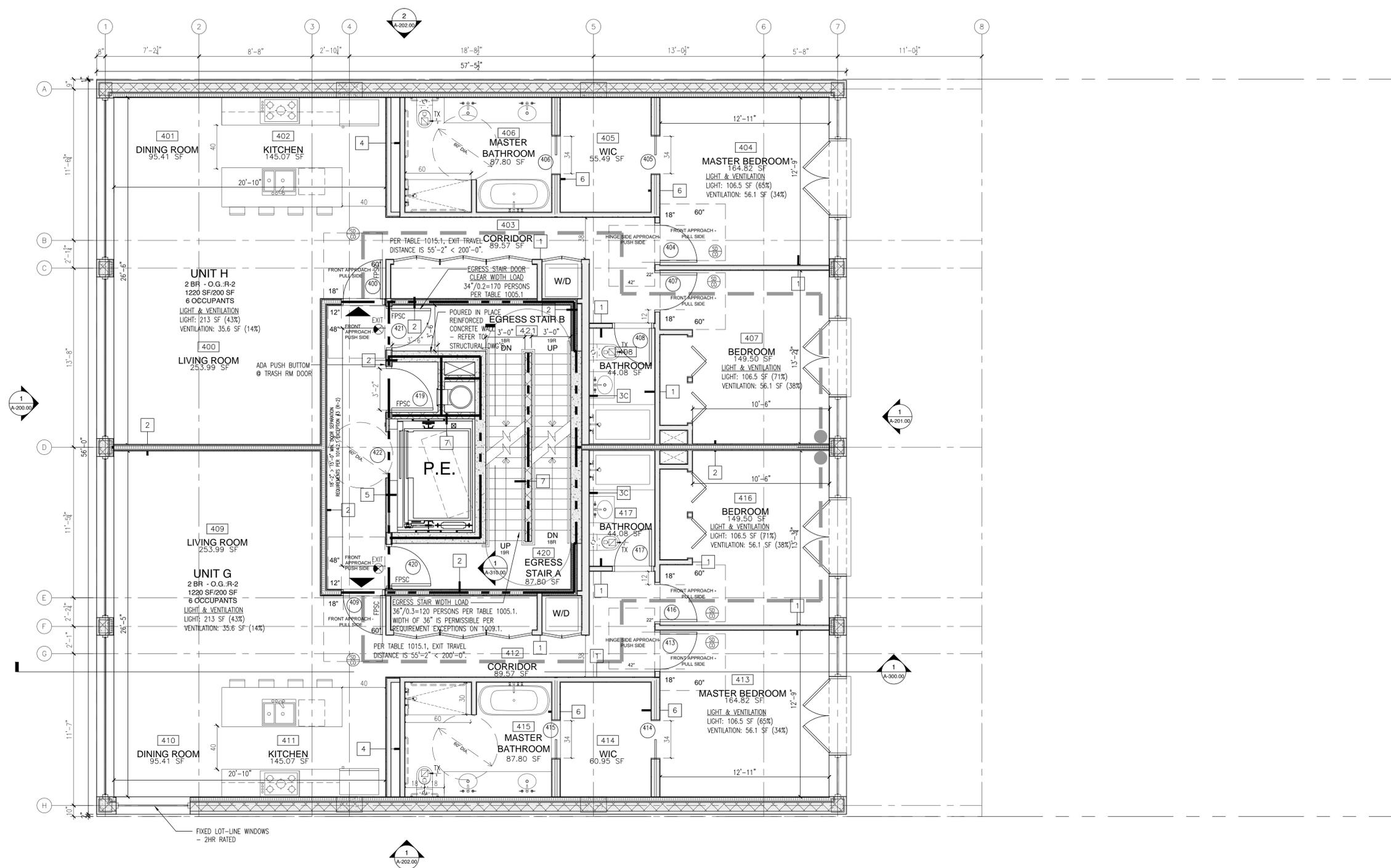
ACOUSTICAL:
SH ACOUSTICS LLC
10 HIGGINS DRIVE
MILFORD, CT 06460
PHONE: 203.877.6240

SURVEYOR:
LEONARD J. STRANDBERG &
ASSOCIATES, P.C.
32 SMITH STREET
FREEPORT, NY 11520
PHONE: 516.378.2044/212.213.4200



DATE 1-Dec-14
SCALE 1/4" = 1'-0"
FOURTH FLOOR PLAN

A-104.00



NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

DECEMBER 01, 2014 FILING DOCUMENTS

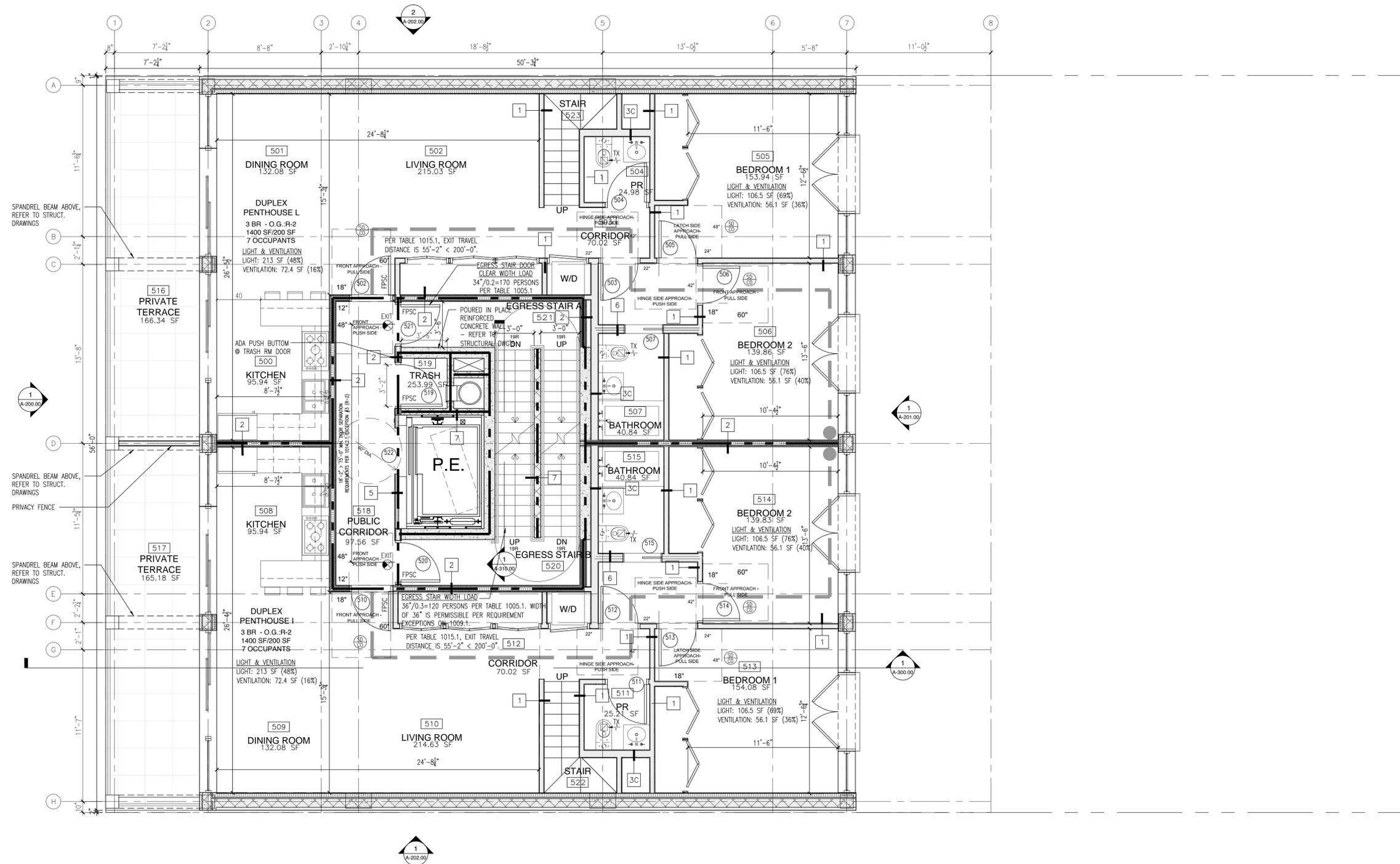
REVISION	ISSUE	REMARKS

FILING DOCUMENTS

<p>OWNER/CLIENT: REDFORD ACQUISITIONS, LLC 1407 BROADWAY, 41ST FLOOR NEW YORK, NY 10018 PHONE: 212.812.1000</p> <p>ARCHITECT: MORRIS ADJMI ARCHITECTS 45 EAST 50TH STREET NEW YORK, NY 10003 PHONE: 212.982.2020</p> <p>MEFP: SILKMAN ENGINEERING ASSOCIATES 545 EIGHTH AVENUE NEW YORK, NY 10018 PHONE: 212.643.9088</p> <p>STRUCTURAL: NSRF 228 EAST 45TH STREET 3RD FLOOR NEW YORK, NY 10017 PHONE: 212.887.9888</p>	<p>CODE CONSULTANT: RELIABLE EXPEDITING INC. 777 KEN AVENUE SUITE 212 BROOKLYN, NY 11205 PHONE: 212.643.8016</p> <p>SOE: FNA ASSOCIATES, INC. 670 BERGEN BOULEVARD RIDGEFIELD NJ 07875 PHONE: 201.241.2444 EXT. 1012</p> <p>ACOUSTICAL: SH ACOUSTICS LLC 10 HIGGINS DRIVE MILFORD, CT 06460 PHONE: 203.877.6340</p> <p>SURVEYOR: LEONARD J. STRANDBERG & ASSOCIATES, P.C. 32 SMITH STREET FREEPORT, NY 11560 PHONE: 516.378.2044/212.213.4200</p>
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DATE 1-Dec-14
SCALE 1/4" = 1'-0"
FIFTH FLOOR PLAN

A-105.00



NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

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REVISION ISSUE REMARKS

FILING DOCUMENTS

OWNER/CLIENT:
REDFORD ACQUISITIONS, LLC
1407 BROADWAY, 41ST FLOOR
NEW YORK, NY 10018
PHONE: 212.612.1000

ARCHITECT:
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45 EAST 50TH STREET
NEW YORK, NY 10023
PHONE: 212.982.2020

MEFP:
SILKOWAN ENGINEERING
ASSOCIATES
545 EIGHTH AVENUE
NEW YORK, NY 10018
PHONE: 212.643.9088

STRUCTURAL:
NSRP
228 EAST 45TH STREET
3RD FLOOR
NEW YORK, NY 10017
PHONE: 212.887.9888

CODE CONSULTANT:
RELIABLE EXPEDITING INC.
777 KEN AVENUE
SUITE 212
BROOKLYN, NY 11205
PHONE: 212.643.8016

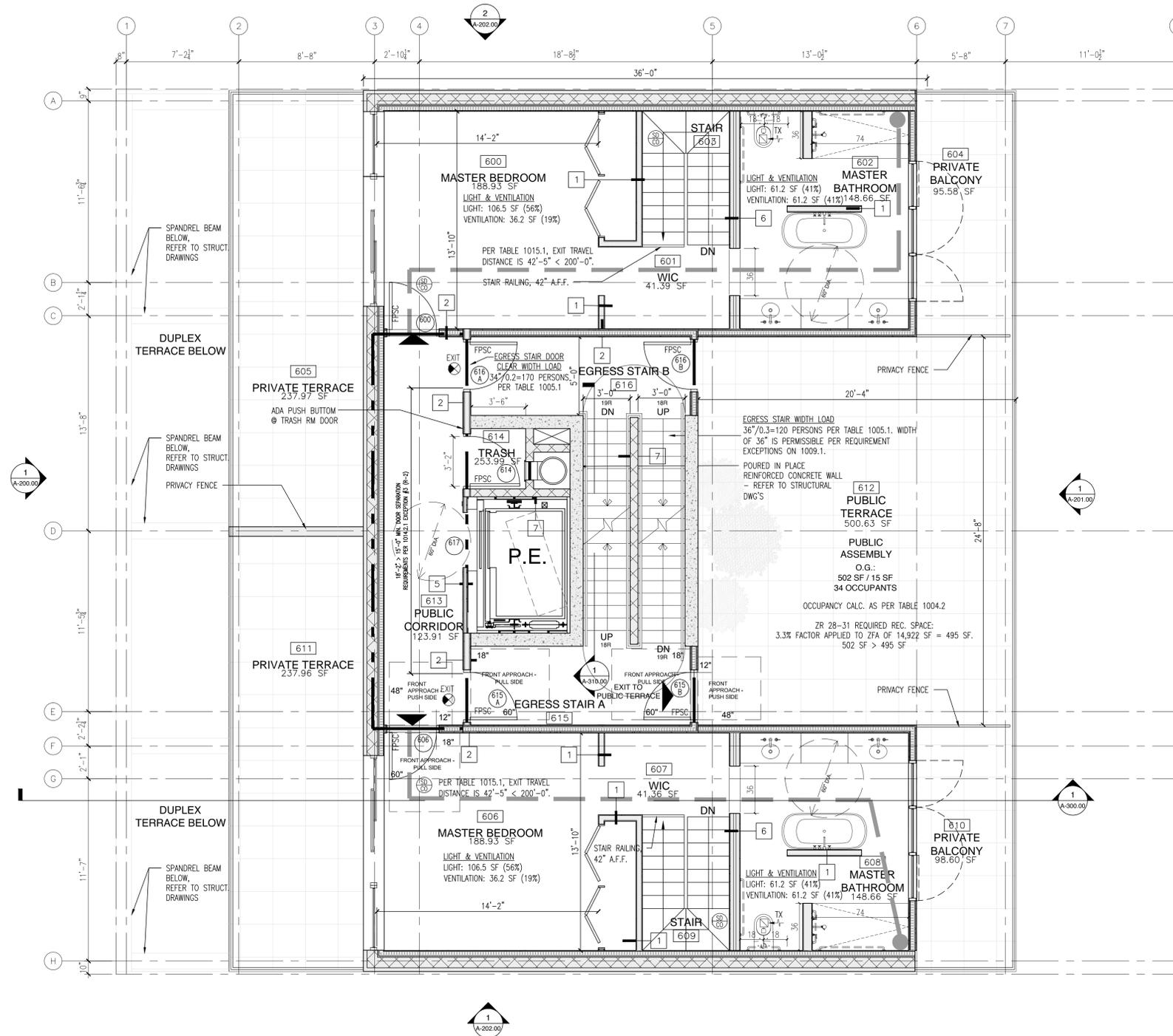
SOE:
FNA ASSOCIATES, INC.
670 BERGEN BOULEVARD
RIDGEFIELD NJ 07875
PHONE: 201.241.2444 EXT. 1012

ACOUSTICAL:
SH ACOUSTICS LLC
10 HIGGINS DRIVE
MILFORD, CT 06460
PHONE: 203.877.6340

SURVEYOR:
LEONARD J. STRANDBERG &
ASSOCIATES, P.C.
82 SMITH STREET
FREEPORT, NY 11520
PHONE: 516.378.2044/212.213.4300

DATE 1-Dec-14
SCALE 1/4" = 1'-0"
SIXTH FLOOR PLAN

A-106.00



NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

DECEMBER 01, 2014 FILING DOCUMENTS

REVISION	ISSUE	REMARKS

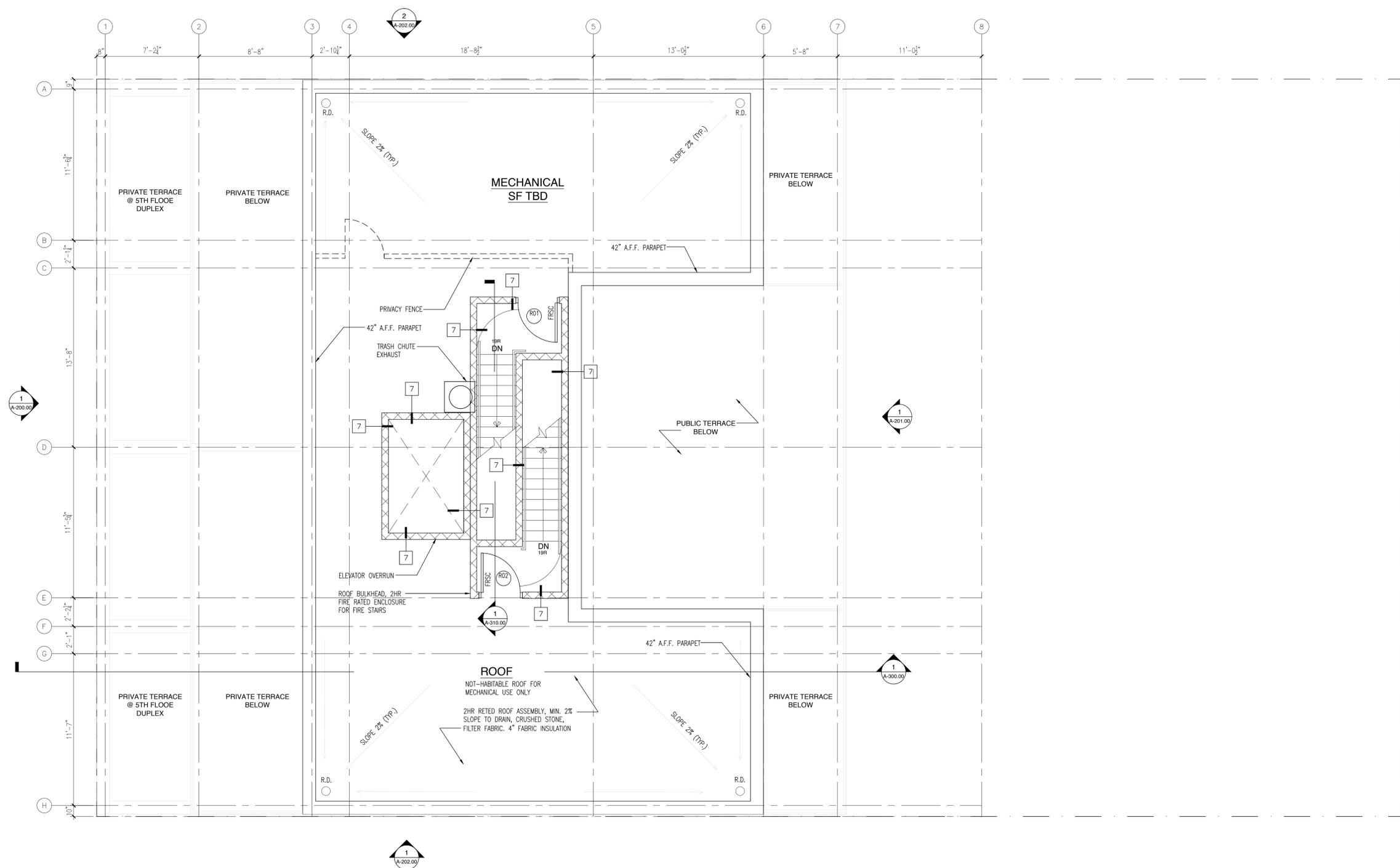
FILING DOCUMENTS

<p>OWNER/CLIENT: BEDFORD ACQUISITIONS, LLC 1407 BROADWAY, 41ST FLOOR NEW YORK, NY 10018 PHONE: 212.812.1000</p> <p>ARCHITECT: MORRIS ADJMI ARCHITECTS 45 EAST 50TH STREET NEW YORK, NY 10003 PHONE: 212.982.2020</p> <p>MEFP: SILKMAN ENGINEERING ASSOCIATES 545 EIGHTH AVENUE NEW YORK, NY 10018 PHONE: 212.943.9008</p> <p>STRUCTURAL: NSRF 228 EAST 45TH STREET 3RD FLOOR NEW YORK, NY 10017 PHONE: 212.887.9888</p>	<p>CODE CONSULTANT: RELIABLE EXPEDITING INC. 777 KEN AVENUE SUITE 212 BROOKLYN, NY 11205 PHONE: 212.643.8016</p> <p>SOE: PKA ASSOCIATES, INC. 670 BERGEN BOULEVARD RIDGEFIELD NJ 07631 PHONE: 201.241.2444 EXT. 1012</p> <p>ACOUSTICAL: SH ACOUSTICS LLC 10 HIGGINS DRIVE MILFORD, CT 06460 PHONE: 203.877.6240</p> <p>SURVEYOR: LEONARD J. STRANDBERG & ASSOCIATES, P.C. 32 SMITH STREET FREEPORT, NY 11520 PHONE: 516.378.2044/212.213.4000</p>
---	---



DATE 1-Dec-14
SCALE 1/4" = 1'-0"
ROOF PLAN

A-107.00



NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

DECEMBER 01, 2014 FILING DOCUMENTS

REVISION	ISSUE	REMARKS

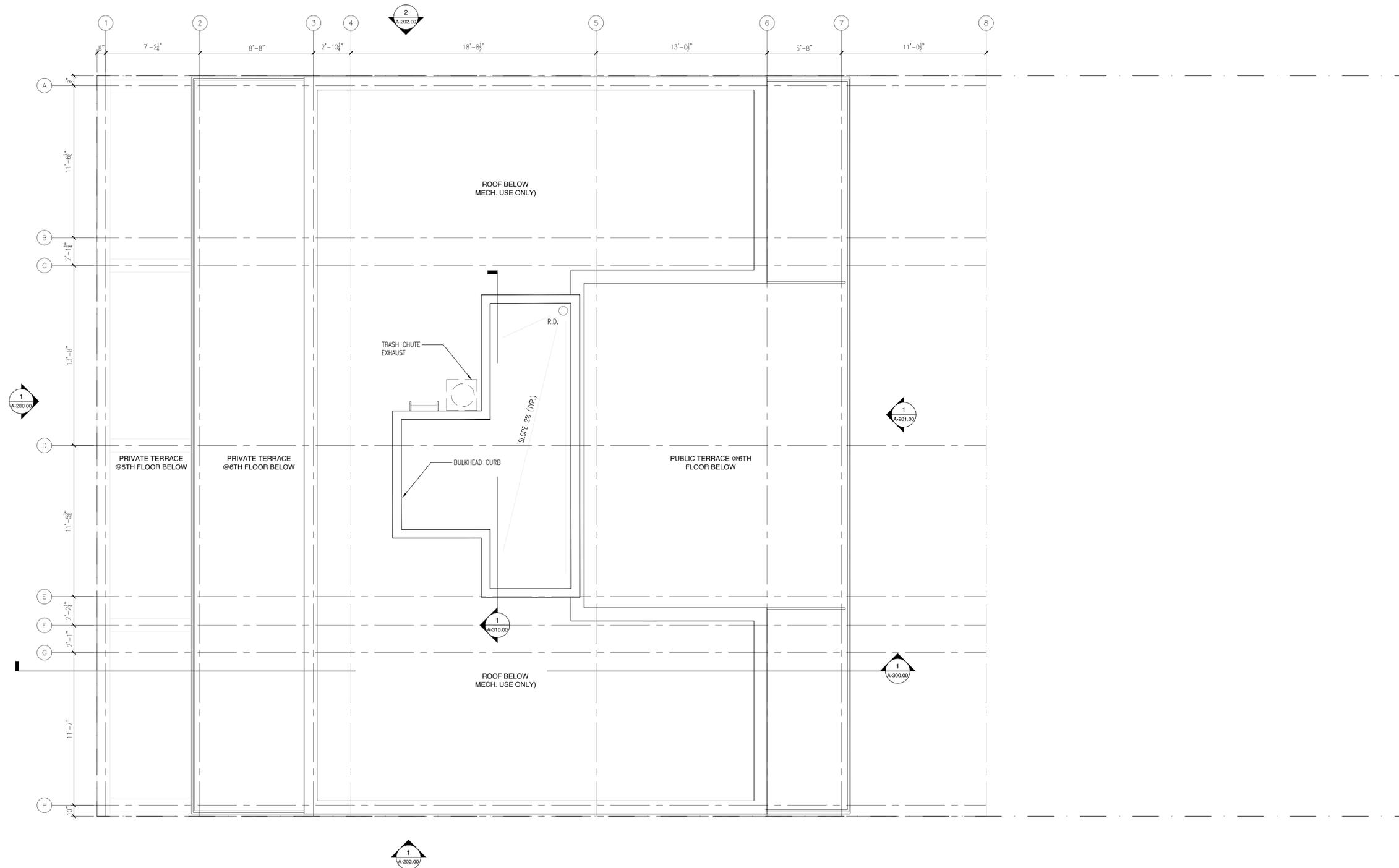
FILING DOCUMENTS

<p>OWNER/CLIENT: BEDFORD ACQUISITIONS, LLC 1407 BROADWAY, 41ST FLOOR NEW YORK, NY 10018 PHONE: 212.812.1000</p> <p>ARCHITECT: MORRIS ADJMI ARCHITECTS 45 EAST 50TH STREET NEW YORK, NY 10003 PHONE: 212.982.2020</p> <p>MEFP: GLICKMAN ENGINEERING ASSOCIATES 545 EIGHTH AVENUE NEW YORK, NY 10018 PHONE: 212.643.9088</p> <p>STRUCTURAL: NSP 228 EAST 45TH STREET 3RD FLOOR NEW YORK, NY 10017 PHONE: 212.887.9888</p>	<p>CODE CONSULTANT: RELIABLE EXPEDITING INC. 777 KEN AVENUE SUITE 212 BROOKLYN, NY 11205 PHONE: 212.643.8016</p> <p>SOE: FNA ASSOCIATES, INC. 670 BERGEN BOULEVARD RIDGEFIELD NJ 07083 PHONE: 201.241.2444 EXT. 1012</p> <p>ACOUSTICAL: SH ACOUSTICS LLC 10 HIGGINS DRIVE MILFORD, CT 06460 PHONE: 203.877.6340</p> <p>SURVEYOR: LEONARD J. STRANDBERG & ASSOCIATES, P.C. 32 SMITH STREET FREEPORT, NY 11520 PHONE: 516.378.2044/212.213.4300</p>
---	---



DATE 1-Dec-14
SCALE 1/4" = 1'-0"
BULKHEAD PLAN

A-108.00



NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

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REVISION ISSUE REMARKS

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OWNER/CLIENT:
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1407 BROADWAY, 41ST FLOOR
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ARCHITECT:
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45 EAST 50TH STREET
NEW YORK, NY 10003
PHONE: 212.982.2020

MEFP:
SILVERMAN ENGINEERING
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545 EIGHTH AVENUE
NEW YORK, NY 10018
PHONE: 212.643.9008

STRUCTURAL:
NSRP
228 EAST 45TH STREET
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NEW YORK, NY 10017
PHONE: 212.887.9888

CODE CONSULTANT:
RELIABLE EXPEDITING INC.
777 KENT AVENUE
SUITE 212
BROOKLYN, NY 11205
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SOE:
FNA ASSOCIATES, INC.
670 BERGEN BOULEVARD
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PHONE: 201.241.2444 EXT. 1012

ACOUSTICAL:
SH ACOUSTICS LLC
10 HIGGINS DRIVE
MILFORD, CT 06460
PHONE: 203.877.6340

SURVEYOR:
LEONARD J. STRANDBERG &
ASSOCIATES, P.C.
32 SMITH STREET
FREEPORT, NY 11520
PHONE: 516.378.2044/212.213.4090



DATE 1-Dec-14

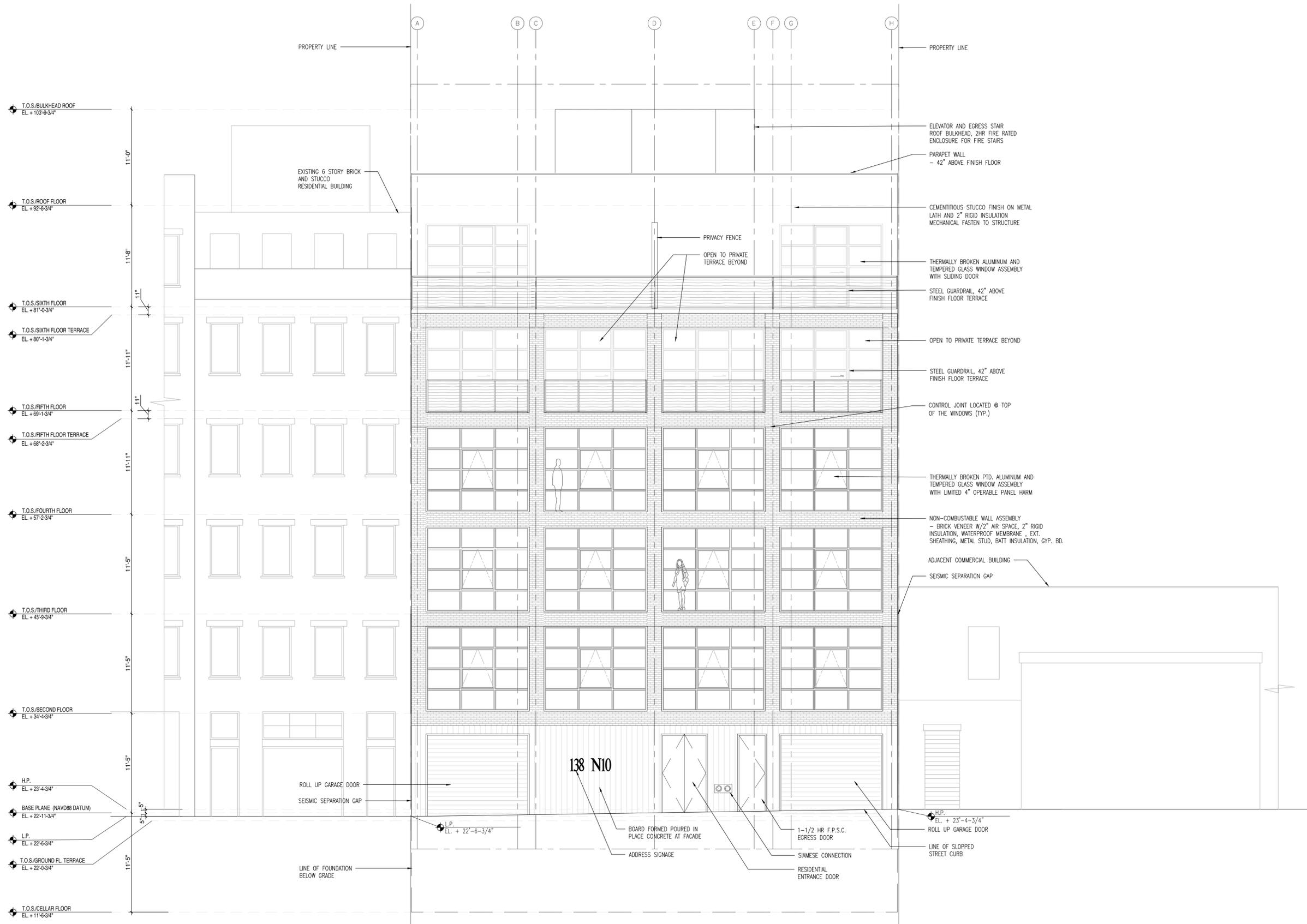
SCALE AS NOTED

NORTH ELEVATION

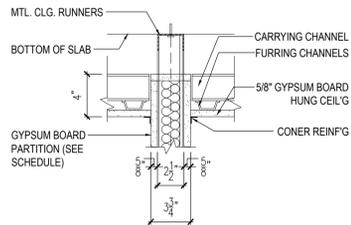
A-200.00

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MA PROJECT # 1414

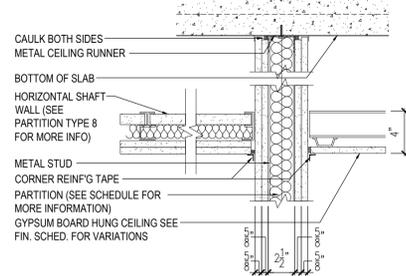


1 NORTH BUILDING ELEVATION
SCALE: 3/16" = 1'-0"



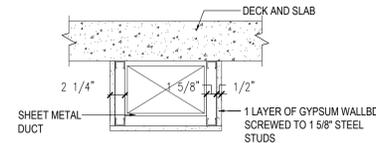
HUNG CEILING DETAIL @ 3 3/4" PARTITION WITHIN APARTMENTS

SCALE: N.T.S. SEE PARTITION SCHEDULE FOR FURTHER DETAIL.



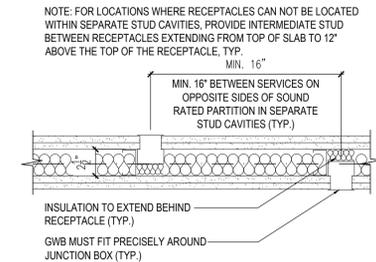
2 HR RATED HUNG CEILING @ PUBLIC CORRIDOR

SCALE: N.T.S. SEE PARTITION SCHEDULE FOR FURTHER DETAIL.



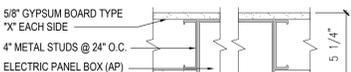
FRAMING DETAIL @ HORIZONTAL OFFSETS (NOT RATED)

SCALE: N.T.S.



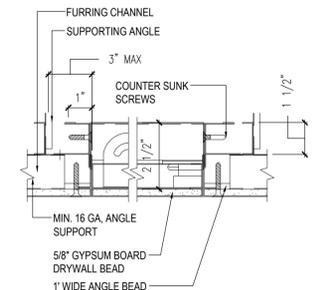
OFFSET OF RECESSED ELECTRICAL RECEPTACLE AT TYPICAL APARTMENT DEMISING PARTITIONS

SCALE: 1 1/2" = 1'-0" (PLAN VIEW)



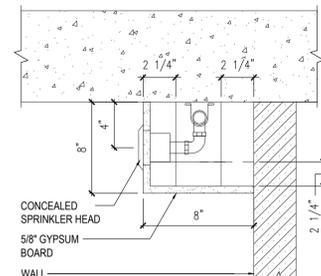
RECESSED ELECTRICAL PANEL BOX

SCALE: N.T.S. TO BE ALSO USED FOR COMMUNICATIONS / CABLE BOXES
NOTE: ALL PANELS TO BE PREFINISHED, SEE I.D. DWGS. FOR MORE INFO



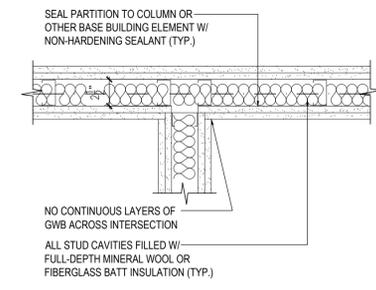
SECT. THRU CEIL'G ACCESS DOOR

SCALE: N.T.S.



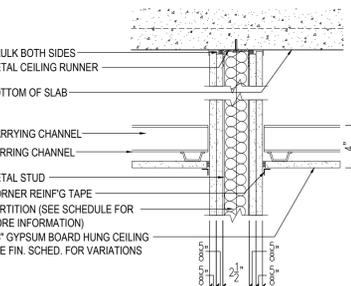
FURRING @ SPRINKLER

SCALE: N.T.S.



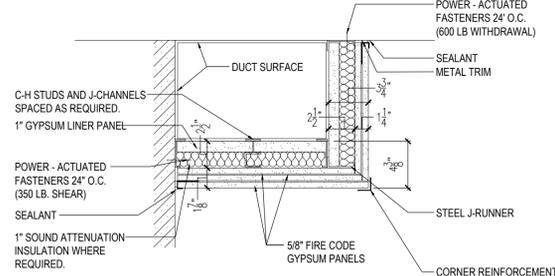
TYPICAL INTERSECTION DETAIL AT APARTMENT/ CORRIDOR DEMISING PARTITION

SCALE: 1 1/2" = 1'-0" (PLAN VIEW)



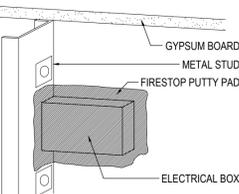
HUNG CEILING @ PARTITION BETWEEN APTS. & BETWEEN APT. & CORRIDOR

SCALE: N.T.S. SEE PARTITION SCHEDULE FOR FURTHER DETAIL.



2 HR FIRE RATING DUCT FIREPROOFING-DETAIL @ HORIZONTAL OFFSETS

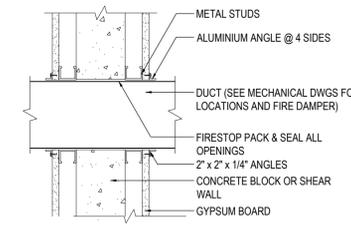
SCALE: N.T.S.



FIRESTOP PUTTY PAD ASTM E 84, MEA-102-99M

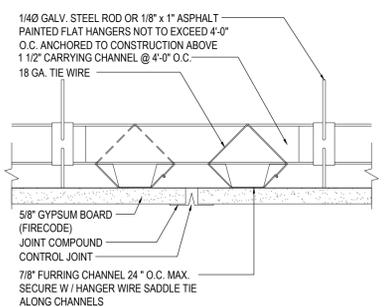
SCALE: N.T.S. TO BE USED WHERE RATED WALLS/SHAFTS ARE PENETRATED BY OUTLETS, SWITCHES, ETC.

GWB MUST FIT PRECISELY AROUND JUNCTION BOX (TYP.)



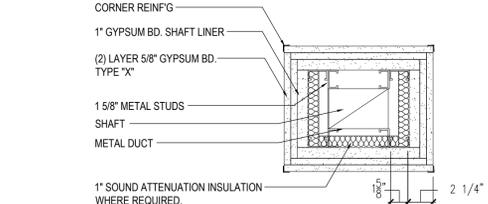
HORIZONTAL DUCT PENETRATIONS

SCALE: N.T.S.



TYPICAL GYP. BD. HUNG CEILING DETAIL

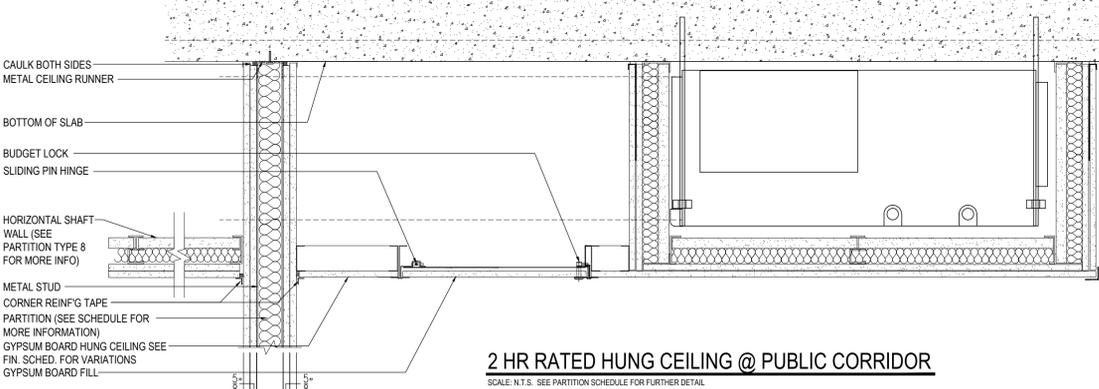
SCALE: N.T.S.
NOTE: ALL HUNG CEILINGS SHALL BE HUNG USING RESILIENT CHANNELS IN ACCORDANCE WITH MANUFACTURER RECOMMENDED DETAILS



2 HR FIRE RATING TYPICAL FREESTANDING DUCT FIREPROOFING-DETAIL @ HORIZONTAL OFFSETS

SCALE: N.T.S.

HORIZONTAL SHAFT - WALL ASSEMBLIES USE CAVITY SHAFT - WALLS INSTALLED HORIZONTALLY ECONOMICAL CONSTRUCTION FOR FIRE - RESESTIVE DUCT PROTECTION, CORRIDOR AND OTHER CEILINGS AND STAIRWAY SOFFITS, WITH 1\"/>



2 HR RATED HUNG CEILING @ PUBLIC CORRIDOR

SCALE: N.T.S. SEE PARTITION SCHEDULE FOR FURTHER DETAIL.

NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

DECEMBER 01, 2014 FILING DOCUMENTS

REVISION ISSUE REMARKS

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DATE 1-Dec-14
SCALE AS NOTED
MISCELLANEOUS DETAILS

A-504.00

NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

PARTITION TYPES -(SEE NOTES BELOW FOR FURTHER INFORMATION):	
1 1 HR	<p>1 HR - BSA # 301-60-SM INTERIOR PARTITION</p> <p>NOTES: ALL NOTES REFER TO BOTH SIDES OF PARTITION, U.O.N. OPENINGS ABOVE FINISHED CEILINGS TO BE PROVIDED AS INDICATED ON MECHANICAL DRAWINGS FOR RETURN AIR FLENUM. ALL STL. STUDS TO BE 18 GAUGE MINIMUM, TYP.</p> <p>PLAN: 5" PLAN DIMENSION 4 7/8" ACTUAL DIMENSION 7" PLAN DIMENSION 7 1/4" ACTUAL DIMENSION</p> <p>BASE: BATHROOM SIDE AND WET WALLS: - SEE FINISH SCHEDULE FOR APPLICATION OF THE TILE OR OTHER WALL FINISH, COORDINATE SUBSTRATE REQUIREMENTS, TYP. - MOISTURE RESISTANT BOARD OR CEMENT BOARD @ ALL WET WALLS</p> <p>NOTES: INTERIOR PARTITIONS TO BE AS FOLLOWS: AS NOTED ABOVE WITH 3 5/8" STEEL STUDS @ 16" O.C. WITH 3 1/2" THICK SOUND ATTENUATION BLANKET AS NOTED ABOVE WITH 6" STEEL STUDS @ 16" O.C. WITH 5 1/2" THICK SOUND ATTENUATION BLANKET MAXIMUM CLEAR HEIGHTS ALLOWED FOR: 16" O.C. 3 5/8" STEEL STUD 16'-3" 6" STEEL STUD 22'-0" IF CLEAR HEIGHT IS GREATER THAN INDICATED, A WIDER STEEL STUD MUST BE USED.</p>
2 2 HR	<p>2 HR 55 STC - BSA # 301-60-SM / MEA #119-04-M PARTITION BETWEEN APARTMENTS, STAIRS, AND PUBLIC CORRIDORS</p> <p>NOTES: ALL NOTES REFER TO BOTH SIDES OF PARTITION, U.O.N. ALL STL. STUDS TO BE 18 GAUGE MINIMUM, TYP.</p> <p>PLAN: 6" PLAN DIMENSION 6 1/8" ACTUAL DIMENSION</p> <p>BASE: BATHROOM SIDE AND WET WALLS: - SEE FINISH SCHEDULE FOR APPLICATION OF THE TILE OR OTHER WALL FINISH, COORDINATE SUBSTRATE REQUIREMENTS, TYP. - MOISTURE RESISTANT BOARD OR CEMENT BOARD @ ALL WET WALLS</p> <p>NOTES: PARTITIONS BETWEEN APARTMENTS, STAIRS, AND PUBLIC CORRIDORS TO BE AS FOLLOWS: AS NOTED ABOVE WITH 3 5/8" STEEL STUDS @ 16" O.C. WITH 3 1/2" THICK SOUND ATTENUATION BLANKET MAXIMUM CLEAR HEIGHTS ALLOWED FOR: 16" O.C. 3 5/8" STEEL STUD 16'-3" IF CLEAR HEIGHT IS GREATER THAN INDICATED, A WIDER STEEL STUD MUST BE USED.</p>
3	<p>INSULATED WALL FURRING</p> <p>NOTES: ALL STL. STUDS TO BE 18 GAUGE MINIMUM, TYP.</p> <p>PLAN: 1 1/2" PLAN DIMENSION 1 1/8" ACTUAL DIMENSION 3 1/2" PLAN DIMENSION 3 1/8" ACTUAL DIMENSION 4 1/2" PLAN DIMENSION 4 1/4" ACTUAL DIMENSION 6 1/2" PLAN DIMENSION 6 5/8" ACTUAL DIMENSION</p> <p>BASE: BATHROOM SIDE AND WET WALLS: - SEE FINISH SCHEDULE FOR APPLICATION OF THE TILE OR OTHER WALL FINISH, COORDINATE SUBSTRATE REQUIREMENTS, TYP. - MOISTURE RESISTANT BOARD OR CEMENT BOARD @ ALL WET WALLS</p> <p>NOTES: INSULATED WALL FURRING TO BE AS FOLLOWS: AS NOTED ABOVE WITH 7/8" FURRING CHANNEL @ 16" O.C. AS NOTED ABOVE WITH 2 1/2" STEEL STUDS @ 16" O.C. WITH 2" THICK SOUND ATTENUATION BLANKET BRACE FRAMING BACK TO WALL WITH STRAPPING 48" O.C. VERTICALLY. AS NOTED ABOVE WITH 3 5/8" STEEL STUDS @ 16" O.C. WITH 3" THICK SOUND ATTENUATION BLANKET. AS NOTED ABOVE WITH 6" STEEL STUDS @ 16" O.C. WITH 5 1/2" THICK SOUND ATTENUATION BLANKET.</p>
4 2 HR	<p>2 HR 55 STC - BSA # 173-77-SM PIPE/MECH. CHASE</p> <p>NOTES: ALL NOTES REFER TO BOTH SIDES OF PARTITION, U.O.N. ALL STL. STUDS TO BE 18 GAUGE MINIMUM, TYP.</p> <p>PLAN: DIMENSION VARIES SEE PLANS</p> <p>BASE: BATHROOM SIDE AND WET WALLS: - SEE FINISH SCHEDULE FOR APPLICATION OF THE TILE OR OTHER WALL FINISH, COORDINATE SUBSTRATE REQUIREMENTS, TYP. - MOISTURE RESISTANT BOARD OR CEMENT BOARD @ ALL WET WALLS</p> <p>NOTES: PIPE CHASE BETWEEN APARTMENTS TO BE AS FOLLOWS: (2) LAYER OF 5/8" GYP. BD. TYPE "X" EACH SIDE OF 2 1/2" STEEL STUDS @ 16 O.C. WITH SOUND ATTENUATION BLANKET</p>

5 2 HR	<p>2 HR - BSA # 354-76-SM ELEVATOR SHAFTS AND CAVITY SHAFT WALLS</p> <p>NOTES: ALL STL. STUDS TO BE 18 GAUGE MINIMUM, TYP.</p> <p>PLAN: 5 1/4" PLAN DIMENSION 5 1/4" ACTUAL DIMENSION</p> <p>BASE: SEE FINISH SCHEDULE FOR FINISH FLOOR AND BASE</p> <p>NOTES: SHAFT WALL TO BE AS FOLLOWS: 2 LAYERS OF 5/8" GYP. BD. TYPE "X" ON CORRIDOR SIDE AND 1" GYP. BD. LINER PANEL ON SHAFT SIDE OF 4" STEEL C-H STUDS @ 16" O.C. MAX WITH 2" THICK SOUND ATTENUATION BLANKET.</p>	6	<p>INTERIOR POCKET DOOR PARTITION</p> <p>NOTES: ALL NOTES REFER TO BOTH SIDES OF PARTITION, U.O.N. ALL STL. STUDS TO BE 18 GAUGE MINIMUM, TYP.</p> <p>PLAN: DIMENSION VARIES SEE PLANS</p> <p>BASE: SEE FINISH SCHEDULE FOR FINISH FLOOR AND BASE</p> <p>NOTES: INTERIOR POCKET DOOR PARTITION TO BE AS FOLLOWS: 1 LAYER OF 5/8" GYP. BD. TYPE "X" WITH 18 GAUGE 1 5/8" STEEL STUDS @ 16" O.C. ON EACH SIDE OF 2" POCKET DOOR HARDWARE</p>	7 2 HR	<p>2 HR - STC RATINGS VARY BSA # 690-47 SM CONCRETE MASONRY WALL</p> <p>NOTES: ALL NOTES REFER TO BOTH SIDES OF PARTITION, U.O.N.</p> <p>PLAN: DIMENSION VARIES SEE PLANS</p> <p>BASE: SEE FINISH SCHEDULE FOR FINISH FLOOR AND BASE</p> <p>NOTES: CONCRETE MASONRY WALL TO BE AS FOLLOWS: 6" CMU PARTIALLY FILLED UL#906 & UL#618 - 2 HOUR 4" BLOCK (90# DENSITY). 8" CMU PARTIALLY FILLED UL#906 & UL#618 - 2 HOUR 4" BLOCK (90# DENSITY). 6" CMU SOLID FILLED UL#904 = 3HR 6" BLOCK (90# DENSITY) @ TRASH REFUSE ROOM BLOCK TO BE FILLED SOLID WITH 3,000 PSI GROUT WHERE REQUIRED FOR SEISMIC REINFORCING. SEE STRUCTURAL DRAWINGS FOR MORE INFORMATION ON MASONRY WALLS</p>
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- NOTES:**
- AT ALL PARTITIONS INDICATED TO RECEIVE TILE, SPACE STUDS 16" O.C. UNLESS STUDS ARE INDICATED AS 12" O.C.
 - PROVIDE ADDITIONAL LAYER OR LAYERS OF GYPSUM BOARD AS REQUIRED FOR PARTITIONS WHERE ADJACENT LAYERS NEED TO BE ALIGNED OR FLUSH.
 - PROVIDE SOUND ATTENUATION WRAP AROUND HORIZONTAL DUCT RUNNING ACROSS AN APARTMENT ONLY. 10'-0" MINIMUM HORIZONTAL LENGTH FROM ROOF FAN. COORDINATE WITH HVAC (SEE MISCELLANEOUS DETAILS AT HORIZONTAL OFFSET DET.)
 - ELECTRICAL AND SERVICE OUTLETS FOR ADJACENT ROOMS ARE TO BE POSITIONED A MINIMUM 24" APART AND IN SEPARATE STUD SPACES.
 - NO GYPSUM BOARD LAYERS ARE TO BE CONTINUOUS BETWEEN TWO ADJACENT ROOMS.
 - DEMISING PARTITIONS TO CLOSE THROUGH PERIMETER FASCIA TO THE BASE BUILDING CONSTRUCTION, SUCH AS COLUMN ENCLOSURES, ETC.
 - PROVIDE CONTINUOUS ACOUSTICAL (NON-HARDENING) CAULKING BEADS ON EACH SIDE OF THE TOP AND BOTTOM STUD RUNNER AT THE 3-WAY INTERSECTION BETWEEN THE RUNNER, FLOOR, AND GYPSUM BOARD.
 - PROVIDE ACOUSTICAL (NON-HARDENING) CAULKING TO CLOSE GAPS BETWEEN ALL RECEPTACLE OUTLETS (ELECTRICAL, TELEPHONE, DATA, ETC.) AND GYPSUM BOARD.
 - MULTIPLE LAYERS OF GYPSUM BOARD ARE TO BE APPLIED WITH JOINTS STAGGERED AT LEAST 16" RELATIVE TO ONE ANOTHER.
 - WALL PENETRATIONS WIDER THAN 24" TO BE FRAMED OUT BY STEEL STUDS. OTHERWISE TO BE BETWEEN FULL HEIGHT STUDS. THE FRAMING SHALL MAINTAIN LESS THAN A 2" GAP AROUND DUCTWORK OR OTHER SERVICE PENETRATING THE WALL.
 - PENETRATIONS THROUGH SOUND CRITICAL PARTITIONS (DUCTS, PIPES, CONDUITS, ETC.) ARE TO BE HANDLED AS FOLLOWS:
A. GAPS GREATER THAN 2" REQUIRE GYPSUM BOARD PATCHING FROM BOTH SIDES, CAREFULLY CUT OUT AROUND PENETRATING ELEMENTS. BATT INSULATION SHALL BE PACKED AROUND PENETRATING ELEMENTS WITHIN THE AREA OF THE PENETRATION.
B. 2" GAPS OR LESS FILLED FROM EACH SIDE WITH HEAVY DENSITY PUTTY WHICH MEETS THE REQUIRED FIRE RATINGS.
C. CABLE TRAYS TO BE PACKED TIGHTLY WITH HEAVY DENSITY PUTTY AS ABOVE, ONCE CABLES ARE PULLED.
 - ALL DEMISING PARTITIONS ARE TO BE BUILT FULL-HEIGHT FROM THE FLOOR SLAB TO THE CEILING SLAB ABOVE, U.O.N.
 - GYPSUM BOARD FOR INTERIOR PARTITIONS WITHIN APARTMENTS TO STOP 3" ABOVE FINISHED CEILING FOR PLENUM. SEE MECHANICAL DRAWINGS FOR MORE INFO REGARDING CEILING PLENUMS.
 - FILL IN SLOT OPENINGS OR SLEEVES ON ALL WALL AND SLAB PENETRATIONS AS REQUIRED WITH THERMAFIBER SAFING INSULATION (HIGH DENSITY), OR EQUAL, AFTER THE INSTALLATION OF DUCTS & PIPING.
 - ALL SLOT OPENINGS OR SLEEVES AT SHEARWALLS, REINFORCED CONCRETE WALLS, COLUMNS, AND BEAMS TO BE APPROVED BY STRUCTURAL ENGINEER AND TO BE COORDINATED WITH MEP ENGINEERS.
 - ALL PARTITIONS ENCLOSING BEDROOMS TO HAVE 3" THICK SOUND ATTENUATION BLANKET, FLOOR SLAB TO TOP OF PARTITION.
 - PROVIDE REQUIRED FIRE RATED FIRESTOPPING WHERE DIFFERENT PARTITION TYPES INTERSECT. WHEN PARTITIONS/SUBSTRUCTURAL ELEMENTS OF VARYING REQUIRED FIRE RATINGS MEET, PROVIDE REQUIRED FIRESTOPPING TO MATCH THE GREATER RATING. (EX. CONCRETE BLOCK/GYPSUM BOARD, STRUCTURAL ELEMENTS WITH SPRAY-ON FIREPROOFING/GYPSUM, ETC.)
 - AT ALL LOCATIONS WHERE GYPSUM BOARD TERMINATES AT THE WINDOW JAMBS, THERE SHALL BE NO MECHANICAL FASTENING INTO THE FRAMES. PROVIDE 1/2" THICK CLOSED CELL NEOPRENE BETWEEN THE MULLION AND PARTITION END STUD WITH SILICONE CAULKING ON EITHER SIDE OF THE NEOPRENE. COMPRESS THE NEOPRENE AS MUCH AS POSSIBLE TO ENSURE AN AIRTIGHT SEAL. ON EITHER SIDE OF THE MULLION, PROVIDE FIELD-APPLIED 5/8" EXTRUDED ALUMINUM SIDEPACKS FILLED WITH INSULATION AND DRYWALL RECEPTORS ADHERED DIRECTLY TO THE WINDOW FRAME WITH 3M VHB 5522 SERIES STRUCTURAL TAPE, OR APPROVED EQUAL.
 - ALL STEEL MEMBERS TO BE GALVANIZED.
 - PROVIDE MOLD AND MOISTURE RESISTANT GYPSUM BOARD U.O.N.
 - PROVIDE MOLD AND MOISTURE RESISTANT FIBERGLASS FACED TILE BACKER BOARD AT ALL AREAS TO RECEIVE TILE, TYP.
 - ALL PARTITIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH USC CONSTRUCTION GUIDELINES TO ENSURE INTENDED FIRE RATING AND ACOUSTICAL PERFORMANCE IS ACHIEVED IN THE FIELD.

DECEMBER 01, 2014 FILING DOCUMENTS

REVISION ISSUE REMARKS

FILING DOCUMENTS

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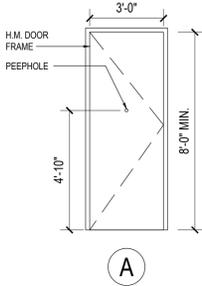
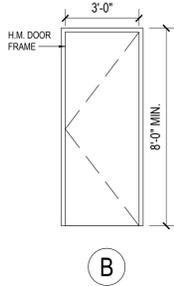
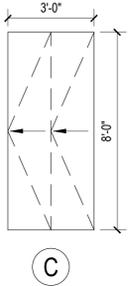
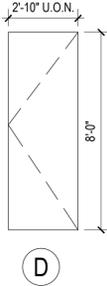
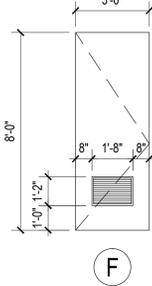
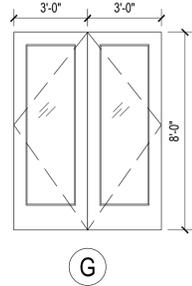
DATE 1-Dec-14

SCALE NTS

PARTITION TYPES

A-600.00

DOOR SCHEDULE:

TYPE:							
SIZE:	Ⓐ 3'-0"x 8'-0"x 1 3/4"	Ⓑ 3'-0"x 8'-0"x 1 3/4"	Ⓒ (1) 3'-0"x 8'-0"x 1 1/4"	Ⓓ 2'-10"x 8'-0"x 1 3/4" U.O.N.	Ⓔ 2'-10"x 8'-0"x 1 3/4" U.O.N.	Ⓕ (1) 3'-0"x 8'-0"x 1 3/4"	Ⓖ (PAIR) 3'-0"x 8'-0"x 2 1/2"
MATERIAL:	HOLLOW METAL	HOLLOW METAL	STAINLESS STEEL	PTD. SOLID CORE WOOD DOOR	PTD. SOLID CORE WOOD DOOR	PTD. HOLLOW METAL	ALUMINUM STOREFRONT AND TEMPERED GLASS
SADDLE:	STONE	STONE	EXTRUDED ALUMINUM	NONE, U.O.N.	NONE, U.O.N.	ALUMINUM	ALUMINUM
BUCK:	1 1/2" WELDED METAL	1 1/2" WELDED METAL	1 1/2" WELDED METAL	FLUSH FRAME	FLUSH FRAME	PTD. 1 1/2" WELDED METAL	PTD. EXTRUDED ALUMINUM FRAME
LOCATION:	APARTMENT ENTRY DOORS PARKING GARAGES	FIRE STAIR EGRESS DOORS & MECHANICAL ROOMS	PASSENGER ELEVATOR (PE 1)	BATHROOM, POWDER ROOMS, & BEDROOMS	BEDROOMS & BATHROOMS	DOOR AT TOP OF EGRESS STAIRS	GROUND FLOOR ENTRY AND VESTIBULE
REMARKS:	FLUSH PANEL F.P.S.C. 1 1/2 HR. TEST 1 1/2 WELDED BUCK ENTRY DOOR U.O.N.	FLUSH PANEL F.P.S.C. 1 1/2 HR. TEST 1 1/2 WELDED BUCK NO LOCKING DEVICES EITHER SIDE U.O.N.	FLUSH PANEL F.P. 1 1/2 HR. TEST SINGLE SPEED SIDE DOOR NOTE: SEE ELEVATOR DRAWINGS AND SPECIFICATIONS FOR FURTHER INFORMATION.	FLUSH PANEL UNDERCUT DOOR 1/2" ABOVE TOP OF FINISHED FLOOR	FLUSH PANEL SLIDING DOOR SLIDING DOOR SYSTEM: HAFELE HAWA JUNIOR 120/B OR EQ.	FLUSH PANEL F.P.S.C. 1 1/2 HR. TEST WELDED BUCK FUSIBLE LINK LOUVER	WIRE GLASS LITE ELECTRIC RELEASE
HARDWARES:	ENTRY DOOR SET	PASSAGE SET W/ PANIC HARDWARE	NONE	PRIVACY SET	PRIVACY SET	PASSAGE SET W/ PANIC HARDWARE	ELECTRONIC LOCK SET W/ PANIC HARDWARE
DOOR TAGS:	B09, B10 100, 107, 114, 115 200, 209 300, 309 400, 409 502, 510 600, 606	B01, B02, B03, B04, B05, B15, B16, B17 116, 123, 124, 125, 126 219, 220, 221 319, 320, 321 419, 420, 421 519, 520, 521 614, 615A, 615B, 616A, 616B	B18 126 222 322 422 522 617	B06, B07, B12, B13 105, 112 204, 207, 208, 213, 216, 217 304, 307, 308, 313, 316, 317 404, 407, 408, 413, 416, 417 503, 504, 505, 506, 511, 512, 513, 514	101, 104, 108, 111 205, 206, 214, 215 305, 306, 314, 315 405, 406, 414, 415 507, 515	R01, R02	117 117A

NORTH 10TH STREET

138-142 NORTH 10TH STREET
BROOKLYN, NY 11249

MORRIS ADJMI ARCHITECTS



NYC DOB BSCAN STICKER

DOB STAMPS / SIGNATURES

DECEMBER 01, 2014 FILING DOCUMENTS

REVISION ISSUE REMARKS

FILING DOCUMENTS

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DATE 1-Dec-14

SCALE NTS

DOOR SCHEDULE

A-610.00

ATTACHMENT B

CITIZEN PARTICIPATION PLAN

The NYC Office of Environmental Remediation and Eastern Capital Group have established this Citizen Participation Plan because the opportunity for citizen participation is an important component of the NYC Voluntary Cleanup Program. This Citizen Participation Plan describes how information about the project will be disseminated to the Community during the remedial process. As part of its obligations under the NYC VCP, Eastern Capital Group will maintain a repository for project documents and provide public notice at specified times throughout the remedial program. This Plan also takes into account potential environmental justice concerns in the community that surrounds the project Site. Under this Citizen Participation Plan, project documents and work plans are made available to the public in a timely manner. Public comment on work plans is strongly encouraged during public comment periods. Work plans are not approved by the NYC Office of Environmental Remediation (OER) until public comment periods have expired and all comments are formally reviewed. An explanation of cleanup plans in the form of a public meeting or informational session is available upon request to OER's project manager assigned to this Site, William Wong, who can be contacted about these issues or any others questions, comments or concerns that arise during the remedial process at (212) 341-0659.

Project Contact List. OER has established a Site Contact List for this project to provide public notices in the form of fact sheets to interested members of the Community. Communications will include updates on important information relating to the progress of the cleanup program at the Site as well as to request public comments on the cleanup plan. The Project Contact List includes owners and occupants of adjacent buildings and homes, principal administrators of nearby schools, hospitals and day care centers, the public water supplier that serves the area, established document repositories, the representative Community Board, City Council members, other elected representatives and any local Brownfield Opportunity Area (BOA) grantee organizations. Any member of the public or organization will be added to the Site Contact List on request. A copy of the Site Contact List is maintained by OER's project manager. If you would like to be added to the Project Contact List, contact NYC OER at (212) 788-8841 or by email at



brownfields@cityhall.nyc.gov.

Repositories. A document repository is maintained in online. Internet access to view OER’s document repositories is available at public libraries. This document repository is intended to house, for community review, all principal documents generated during the cleanup program including Remedial Investigation plans and reports, Remedial Action work plans and reports, and all public notices and fact sheets produced during the lifetime of the remedial project.

The library nearest the Site is:

Brooklyn Public Library - Greenpoint Branch
107 Norman Avenue at Leonard Street, Brooklyn, NY
Telephone Number: 718-349-8504

Hours of Operation:

Mon	closed
Tue	10:00AM - 6:00PM
Wed	10:00AM - 6:00PM
Thu	1:00PM - 8:00PM
Fri	10:00AM - 6:00PM
Sat	10:00AM - 5:00PM
Sun	closed

Digital Documentation. NYC OER strongly encourages the use of digital documents in repositories as a means of minimizing paper use while also increasing convenience in access and ease of use.

Identify Issues of Public Concern. The major issues of concern to the public will be potential impacts of nuisance odors and dust during the disturbance of historic fill soils at the Site. This

work will be performed in accordance with procedures which will be specified under a detailed Remedial Program which considers and takes preventive measures for exposures to future residents of the property and those on adjacent properties during construction. Detailed plans to monitor the potential for exposure including a Construction Health and Safety Plan and a Community Air Monitoring Plan are required components of the remedial program. Implementation of these plans will be under the direct oversight of the New York City Department of Environmental Remediation (NYCOER).

These plans will specify the following worker and community health and safety activities during remedial activity at the Site:

- On-Site air monitoring for worker protection,
- Perimeter air monitoring for community protection.

The Health and Safety Plan and the Community Air Monitoring Plan prepared as part of the Remedial Action Work Plan will be available for public review at the document repository.

Public Notice and Public Comment. Public notice to all members of the Project Contact List is required at three major steps during the performance of the cleanup program (listed below) and at other points that may be required by OER. Notices will include Fact Sheets with descriptive project summaries, updates on recent and upcoming project activities, repository information, and important phone and email contact information. All notices will be prepared by Eastern Capital Group, reviewed and approved by OER prior to distribution and mailed by Eastern Capital Group. Public comment is solicited in public notices for all work plans developed under the NYC Voluntary Cleanup Program. Final review of all work plans by OER will consider all public comments. Approval will not be granted until the public comment period has been completed.

Citizen Participation Milestones. Public notice and public comment activities occur at several steps during a typical NYC VCP project. See flow chart on the following page, which identifies when during the NYC VCP public notices are issued: These steps include:

- **Public Notice of the availability of the Remedial Investigation Report and Remedial Action Work Plan and a 30-day public comment period on the Remedial Action Work Plan.**

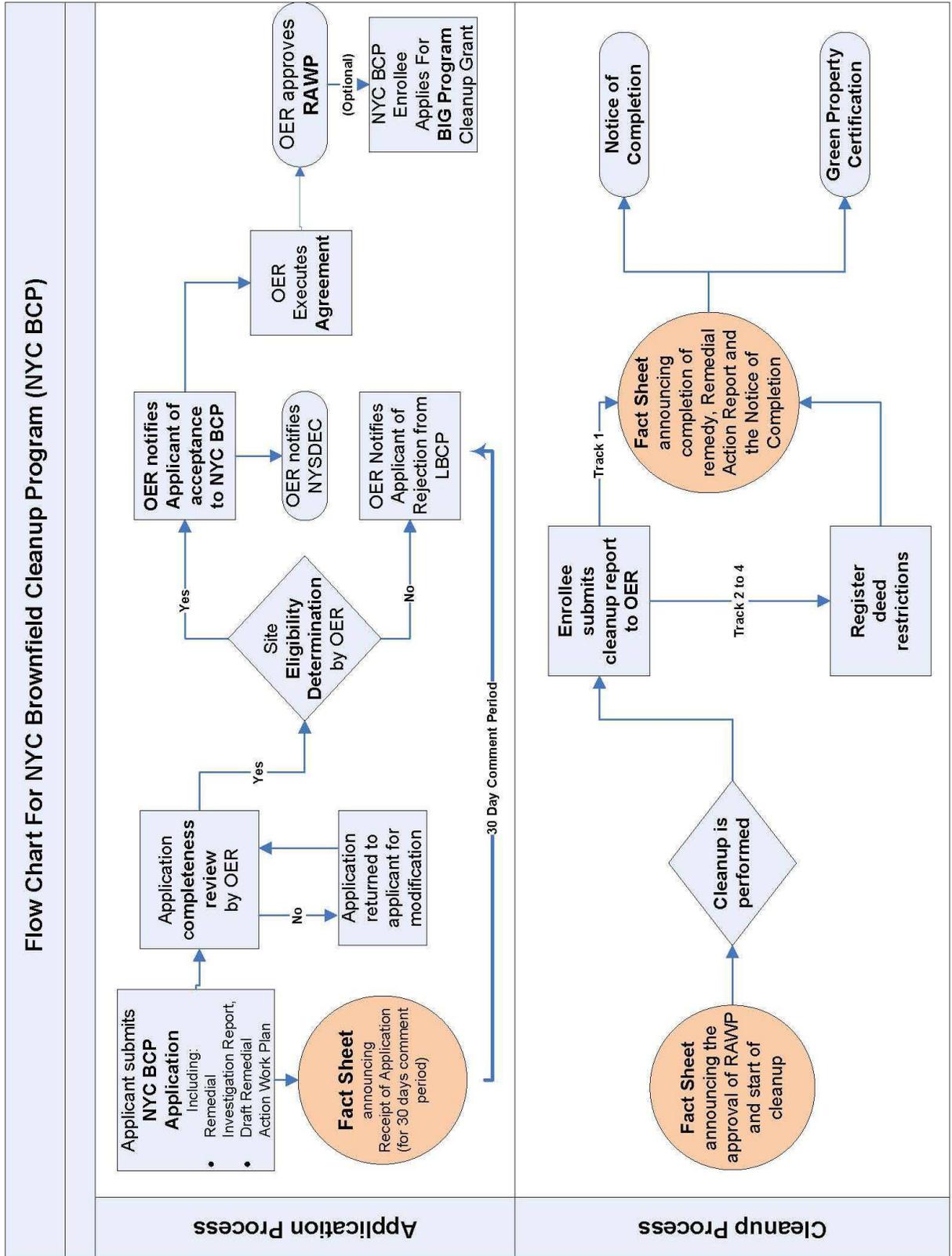
Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the availability of the Remedial Investigation Report and Remedial Action Work Plan and the initiation of a 30-day public comment period on the Remedial Action Work Plan. The Fact Sheet summarizes the findings of the RIR and provides details of the RAWP. The public comment period will be extended an additional 15 days upon public request. A public meeting or informational session will be conducted by OER upon request.

- **Public Notice announcing the approval of the RAWP and the start of remediation**

Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the approval of the RAWP and the start of remediation.

- **Public Notice announcing the completion of remediation, designation of Institutional and Engineering Controls and issuance of the Notice of Completion**

Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the completion of remediation, providing a list of all Institutional and Engineering Controls implemented for to the Site and announcing the issuance of the Notice of Completion.



ATTACHMENT C SUSTAINABILITY STATEMENT

This Sustainability Statement documents sustainable activities and green remediation efforts planned under this remedial action.

Reuse of Clean, Recyclable Materials. Reuse of clean, locally-derived recyclable materials reduces consumption of non-renewable virgin resources and can provide energy savings and greenhouse gas reduction.

This project intends to use recycled concrete aggregate wherever possible in grading and backfilling the Site. An estimate of the quantity (in tons) of clean, non-virgin materials (reported by type of material) reused under this plan will be quantified and reported in the RAR.

Reduce Consumption of Virgin and Non-Renewable Resources. Reduced consumption of virgin and non-renewable resources lowers the overall environmental impact of the project on the region by conserving these resources.

The project will reduce the consumption of virgin materials by substituting recycled concrete aggregate for mined gravel and/or sand backfill whenever possible. An estimate of the quantity (in tons) of virgin and non-renewable resources, the use of which will be avoided under this plan, will be quantified and reported in the RAR.

Reduced Energy Consumption and Promotion of Greater Energy Efficiency. Reduced energy consumption lowers greenhouse gas emissions, improves local air quality, lessens in-city power generation requirements, can lower traffic congestion, and provides substantial cost savings.

Recycled concrete materials and other backfill materials will be locally sourced reducing the energy consumption associated with transporting these materials to the Site. Best efforts will be made to quantify energy efficiencies achieved during the remediation and will be reported in the Remedial Action Report (RAR). Where energy savings cannot be easily quantified, a gross indicator of the amount of energy saved or the means by which energy savings was achieved will

be reported.

Paperless Voluntary Cleanup Program. Eastern Capital Group is participating in OER's Paperless Voluntary Cleanup Program. Under this program, submission of electronic documents will replace submission of hard copies for the review of project documents, communications and milestone reports.

Low-Energy Project Management Program. Eastern Capital Group is participating in OER's low-energy project management program. Under this program, whenever possible, meetings are held using remote communication technologies, such as videoconferencing and teleconferencing to reduce energy consumption and traffic congestion associated with personal transportation.

ATTACHMENT D

SOIL/MATERIALS MANAGEMENT PLAN

1.1 SOIL SCREENING METHODS

Visual, olfactory and PID soil screening and assessment will be performed under the supervision of a Qualified Environmental Professional and will be reported in the RAR. Soil screening will be performed during invasive work performed during the remedy and development phases prior to issuance of the Notice of Completion.

1.2 STOCKPILE METHODS

Excavated soil from suspected areas of contamination (e.g., hot spots, USTs, drains, etc.) will be stockpiled separately and will be segregated from clean soil and construction materials. Stockpiles will be used only when necessary and will be removed as soon as practicable. While stockpiles are in place, they will be inspected daily, and before and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. Excavated soils will be stockpiled on, at minimum, double layers of 8-mil minimum sheeting, will be kept covered at all times with appropriately anchored plastic tarps, and will be routinely inspected. Broken or ripped tarps will be promptly replaced.

All stockpile activities will be compliant with applicable laws and regulations. Soil stockpile areas will be appropriately graded to control run-off in accordance with applicable laws and regulations. Stockpiles of excavated soils and other materials shall be located at least of 50 feet from the property boundaries, where possible. Hay bales or equivalent will surround soil stockpiles except for areas where access by equipment is required. Silt fencing and hay bales will be used as needed near catch basins, surface waters and other discharge points.

1.3 CHARACTERIZATION OF EXCAVATED MATERIALS

Soil/fill or other excavated media that is transported off-Site for disposal will be sampled in a manner required by the receiving facility, and in compliance with applicable laws and regulations. Soils proposed for reuse on-Site will be managed as defined in this plan.

1.4 MATERIALS EXCAVATION, LOAD-OUT AND DEPARTURE

The PE/QEP overseeing the remedial action will:

- oversee remedial work and the excavation and load-out of excavated material;
- ensure that there is a party responsible for the safe execution of invasive and other work performed under this work plan;
- ensure that Site development activities and development-related grading cuts will not interfere with, or otherwise impair or compromise the remedial activities proposed in this RAWP;
- ensure that the presence of utilities and easements on the Site has been investigated and that any identified risks from work proposed under this plan are properly addressed by appropriate parties;
- ensure that all loaded outbound trucks are inspected and cleaned if necessary before leaving the Site; and
- ensure that all egress points for truck and equipment transport from the Site will be kept clean of Site-derived materials during Site remediation.

Locations where vehicles exit the Site shall be inspected daily for evidence of soil tracking off premises. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

Open and uncontrolled mechanical processing of historical fill and contaminated soil on-Site will not be performed without prior OER approval.

1.5 OFF-SITE MATERIALS TRANSPORT

Loaded vehicles leaving the Site will comply with all applicable materials transportation requirements (including appropriate covering, manifests, and placards) in accordance with applicable laws and regulations, including use of licensed haulers in accordance with 6 NYCRR Part 364. If loads contain wet material capable of causing leakage from trucks, truck liners will be used. Queuing of trucks will be performed on-Site, when possible in order to minimize off Site disturbance. Off-Site queuing will be minimized. The outbound truck transport route is shown on Figure 8.

This routing takes into account the following factors: (a) limiting transport through residential areas and past sensitive sites; (b) use of mapped truck routes; (c) minimizing off-Site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport. To the extent possible, all trucks loaded with Site materials will travel from the Site using these truck routes. Trucks will not stop or idle in the neighborhood after leaving the project Site.

1.6 MATERIALS DISPOSAL OFF-SITE

The following documentation will be established and reported by the PE/QEP for each disposal destination used in this project to document that the disposal of regulated material exported from the Site conforms with applicable laws and regulations: (1) a letter from the PE/QEP or Enrollee to each disposal facility describing the material to be disposed and requesting written acceptance of the material. This letter will state that material to be disposed is regulated material generated at an environmental remediation Site in Brooklyn, New York under a governmental remediation program. The letter will provide the project identity and the name and phone number of the PE/QEP or Enrollee. The letter will include as an attachment a summary of all chemical data for the material being transported; and (2) a letter from each disposal facility stating it is in receipt of the correspondence (1, above) and is approved to accept the material. These documents will be included in the RAR.

The Remedial Action Report will include an itemized account of the destination of all material removed from the Site during this remedial action. Documentation associated with disposal of all material will include records and approvals for receipt of the material. This information will be presented in the RAR.

All impacted soil/fill or other waste excavated and removed from the Site will be managed as regulated material and will be disposed in accordance with applicable laws and regulations. Historic fill and contaminated soils taken off-Site will be handled as solid waste and will not be disposed at a Part 360-16 Registration Facility (also known as a Soil Recycling Facility).

Waste characterization will be performed for off-Site disposal in a manner required by the receiving facility and in conformance with its applicable permits. Waste characterization sampling and analytical methods, sampling frequency, analytical results and QA/QC will be reported in the RAR. A manifest system for off-Site transportation of exported materials will be employed. Manifest information will be reported in the RAR. Hazardous wastes derived from on-Site will be stored, transported, and disposed of in compliance with applicable laws and regulations.

If disposal of soil/fill from this Site is proposed for unregulated disposal (i.e., clean soil removed for development purposes), including transport to a Part 360-16 Registration Facility, a formal request will be made for approval by OER with an associated plan compliant with 6NYCRR Part 360-16. This request and plan will include the location, volume and a description of the material to be recycled, including verification that the material is not impacted by site uses and that the material complies with receipt requirements for recycling under 6NYCRR Part 360. This material will be appropriately handled on-Site to prevent mixing with impacted material.

1.7 MATERIALS REUSE ON-SITE

Soil and fill that is derived from the property that meets the soil cleanup objectives established in this plan may be reused on-Site. The soil cleanup objectives for on-Site reuse are listed in Table 1. 'Reuse on-Site' means material that is excavated during the remedy or development, does not leave the property, and is relocated within the same property and on comparable soil/fill material, and addressed pursuant to the NYC VCP agreement subject to Engineering and Institutional Controls. The PE/QEP will ensure that reused materials are segregated from other materials to be exported from the Site and that procedures defined for material reuse in this RAWP are followed.

Organic matter (wood, roots, stumps, etc.) or other waste derived from clearing and grubbing of the Site will not be buried on-Site. Soil or fill excavated from the site for grading or other purposes will not be reused within a cover soil layer or within landscaping berms.

1.8 DEMARCATION

After completion of hotspot removal and any other invasive remedial activities, and prior to backfilling, the top of the residual soil/fill will be defined by one of three methods: (1) placement of a demarcation layer. The demarcation layer will consist of geosynthetic fencing or equivalent material to be placed on the surface of residual soil/fill to provide an observable reference layer. A description or map of the approximate depth of the demarcation layer will be provided in the SMP; or (2) a land survey of the top elevation of residual soil/fill before the placement of cover soils, pavement and associated sub-soils, or other materials or structures or, (3) all materials beneath the approved cover will be considered impacted and subject to site management after the remedy is complete. Demarcation may be established by one or any combination of these three methods. As appropriate, a map showing the method of demarcation for the Site and all associated documentation will be presented in the RAR.

This demarcation will constitute the top of the site management horizon. Materials within this horizon require adherence to special conditions during future invasive activities as defined in the Site Management Plan.

1.9 IMPORT OF BACKFILL SOIL FROM OFF-SITE SOURCES

This Section presents the requirements for imported fill materials to be used below the cover layer and within the clean soil cover layer. All imported soils will meet OER-approved backfill and cover soil quality objectives for this Site. The backfill and cover soil quality objectives are listed in Table 1.

A process will be established to evaluate sources of backfill and cover soil to be imported to the Site, and will include an examination of source location, current and historical use(s), and any applicable documentation. Material from industrial sites, spill sites, environmental remediation sites or other potentially contaminated sites will not be imported to the Site.

The following potential sources may be used pending attainment of backfill and cover soil quality objectives:

- Clean soil from construction projects at non-industrial sites in compliance with applicable laws and regulations;
- Clean soil from roadway or other transportation-related projects in compliance with applicable laws and regulations;
- Clean recycled concrete aggregate (RCA) from facilities permitted or registered by the regulations of NYS DEC.

All materials received for import to the Site will be approved by a PE/QEP and will be in compliance with provisions in this RAWP. The RAR will report the source of the fill, evidence that an inspection was performed on the source, chemical sampling results, frequency of testing, and a Site map indicating the locations where backfill or soil cover was placed.

Source Screening and Testing

Inspection of imported fill material will include visual, olfactory and PID screening for evidence of contamination. Materials imported to the Site will be subject to inspection, as follows:

- Trucks with imported fill material will be in compliance with applicable laws and regulations and will enter the Site at designated locations;
- The PE/QEP is responsible to ensure that every truck load of imported material is inspected for evidence of contamination; and
- Fill material will be free of solid waste including pavement materials, debris, stumps, roots, and other organic matter, as well as ashes, oil, perishables or foreign matter.

Composite samples of imported material will be taken at a minimum frequency of one sample for every 500 cubic yards of material. Once it is determined that the fill material meets imported backfill or cover soil chemical requirements and is non-hazardous, and lacks petroleum contamination, the material will be loaded onto trucks for delivery to the Site.

Recycled concrete aggregate (RCA) will be imported from facilities permitted or registered by NYSDEC. Facilities will be identified in the RAR. A PE/QEP is responsible to ensure that the facility is compliant with 6NYCRR Part 360 registration and permitting requirements for the period of acquisition of RCA. RCA imported from compliant facilities will not require additional

testing, unless required by NYSDEC under its terms for operation of the facility. RCA imported to the Site must be derived from recognizable and uncontaminated concrete. RCA material is not acceptable for, and will not be used as cover material.

1.10 FLUIDS MANAGEMENT

All liquids to be removed from the Site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable laws and regulations. Liquids discharged into the New York City sewer system will receive prior approval by New York City Department of Environmental Protection (NYC DEP). The NYC DEP regulates discharges to the New York City sewers under Title 15, Rules of the City of New York Chapter 19. Discharge to the New York City sewer system will require an authorization and sampling data demonstrating that the groundwater meets the City's discharge criteria. The dewatering fluid will be pretreated as necessary to meet the NYC DEP discharge criteria. If discharge to the City sewer system is not appropriate, the dewatering fluids will be managed by transportation and disposal at an off-Site treatment facility.

Discharge of water generated during remedial construction to surface waters (i.e. a stream or river) is prohibited without a SPDES permit issued by New York State Department of Environmental Conservation.

1.11 STORM-WATER POLLUTION PREVENTION

Applicable laws and regulations pertaining to storm-water pollution prevention will be addressed during the remedial program. Erosion and sediment control measures identified in this RAWP (silt fences and barriers, and hay bale checks) will be installed around the entire perimeter of the remedial construction area and inspected once a week and after every storm event to ensure that they are operating appropriately. Discharge locations will be inspected to determine whether erosion control measures are effective in preventing significant impacts to receptors. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. All necessary repairs shall be made immediately. Accumulated sediments will be removed as required to keep the barrier and hay bale check functional. Undercutting or erosion of the silt fence toe anchor will be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

1.12 CONTINGENCY PLAN

This contingency plan is developed for the remedial construction to address the discovery of unknown structures or contaminated media during excavation. Identification of unknown contamination source areas during invasive Site work will be promptly communicated to OER's Project Manager. Petroleum spills will be reported to the NYS DEC Spill Hotline. These findings will be included in the daily report. If previously unidentified contaminant sources are found during on-Site remedial excavation or development-related excavation, sampling will be performed on contaminated source material and surrounding soils and reported to OER. Chemical analytical testing will be performed for TAL metals, TCL volatiles and semi-volatiles, TCL pesticides and PCBs, as appropriate.

1.13 ODOR, DUST AND NUISANCE CONTROL

Odor Control

All necessary means will be employed to prevent on- and off-Site odor nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; and (c) use of foams to cover exposed odorous soils. If odors develop and cannot otherwise be controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-Site disposal; and (e) use of chemical odorants in spray or misting systems.

This odor control plan is capable of controlling emissions of nuisance odors. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. OER will be notified of all odor complaint events. Implementation of all odor controls, including halt of work, will be the responsibility of the PE/QEP's certifying the Remedial Action Report.

Dust Control

Dust management during invasive on-Site work will include, at a minimum:

- Use of a dedicated water spray methodology for roads, excavation areas and stockpiles.
- Use of properly anchored tarps to cover stockpiles.
- Exercise extra care during dry and high-wind periods.
- Use of gravel or recycled concrete aggregate on egress and other roadways to provide a clean and dust-free road surface.

This dust control plan is capable of controlling emissions of dust. If nuisance dust emissions are identified, work will be halted and the source of dusts will be identified and corrected. Work will not resume until all nuisance dust emissions have been abated. OER will be notified of all dust complaint events. Implementation of all dust controls, including halt of work, will be the responsibility of the PE/QEP's responsible for certifying the Remedial Action Report.

Other Nuisances

Noise control will be exercised during the remedial program. All remedial work will conform, at a minimum, to NYC noise control standards.

Rodent control will be provided, during Site clearing and grubbing, and during the remedial program, as necessary, to prevent nuisances.

ATTACHMENT E
HEALTH AND SAFETY PLAN

**138-142 North 10th Street
BROOKLYN, NEW YORK
Block 2304, Lots 12, 13 AND 14**

**CONSTRUCTION
HEALTH AND SAFETY PLAN**

February 2015

Prepared By:

EBC

ENVIRONMENTAL BUSINESS

1808 Middle Country Road
Ridge, NY 11961

HEALTH AND SAFETY PLAN

Site: **Redevelopment Project**

Location: **138-142 North 10th Street, Brooklyn, NY**

Prepared By: **ENVIRONMENTAL BUSINESS CONSULTANTS**

Date Prepared: **February - 2015**

Version: **1**

Revision: **0**

Project Description:

Waste types: Solid

Characteristics: VOCs, SVOCs, pesticides and metals – in historic fill (0 to 4 ft of soil)

Overall Hazard: Low

ENVIRONMENTAL BUSINESS CONSULTANTS (EBC) AND EBC'S SUBCONTRACTORS DO NOT GUARANTEE THE HEALTH OR SAFETY OF ANY PERSON ENTERING THIS SITE. DUE TO THE NATURE OF THIS SITE AND THE ACTIVITY OCCURRING THEREON, IT IS NOT POSSIBLE TO DISCOVER, EVALUATE, AND PROVIDE PROTECTION FOR ALL POSSIBLE HAZARDS WHICH MAY BE ENCOUNTERED. STRICT ADHERENCE TO THE HEALTH AND SAFETY GUIDELINES SET FORTH HEREIN WILL REDUCE, BUT NOT ELIMINATE, THE POTENTIAL FOR INJURY AT THIS SITE. THE HEALTH AND SAFETY GUIDELINES IN THIS PLAN WERE PREPARED SPECIFICALLY FOR THIS SITE AND SHOULD NOT BE USED ON ANY OTHER SITE WITHOUT PRIOR RESEARCH AND EVALUATION.

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STATEMENT OF COMMITMENT

This Health and Safety Plan (HASP) has been prepared to ensure that workers are not exposed to risks from hazardous materials during the Remedial Activities planned for 138-142 North 10th Street, Brooklyn, New York.

This HASP, which applies to persons present at the site actually or potentially exposed to hazardous materials, describes emergency response procedures for actual and potential chemical hazards. This HASP is also intended to inform and guide personnel entering the work area or exclusion zone. Persons are to acknowledge that they understand the potential hazards and the contents of this Health and Safety policy by signing off on receipt of their individual copy of the document. The General Contractor and their subcontractors and suppliers are retained as independent contractors and are responsible for ensuring the health and safety of their own employees. The General contractor has the option of adopting this HASP or providing its own for the planned scope of work under the Remedial Action Plan.



1.0 INTRODUCTION

This document describes the health and safety guidelines developed by Environmental Business Consultants (EBC) for implementation of a Remedial Action Work Plan at the Redevelopment - Project located at 138-142 North 10th Street, Brooklyn, NY, to protect on-site personnel, visitors, and the public from physical harm and exposure to hazardous materials or wastes during the removal of underground storage tanks and the excavation and loading of contaminated soil. In accordance with the Occupational Safety and Health Administration (OSHA) 29 CFR Part 1910.120 Hazardous Waste Operations and Emergency Response Final rule, this CHASP, including the attachments, addresses safety and health hazards related to subsurface sample collection activities and is based on the best information available. The CHASP may be revised by EBC at the request of 108 Frost LLC (“the Owner”) and/or the New York State Department of Environmental Conservation (NYSDEC) or New York City Office of Environmental Remediation (NYCOER) upon receipt of new information regarding site conditions. Changes will be documented by written amendments signed by EBC’s Project Manager, site safety officer and/or the EBC Health and Safety Consultant.

1.1 Scope

This CHASP addresses the potential hazards related to the site Remedial Action Plan (RAP). The RAP activities are as described below:

- 1) Site mobilization of General Contractor (GC) and Subcontractors to install the building foundation.
 - a) Excavate up to 12 feet of historic fill for proposed building's cellar and rear yard;
 - b) Excavate as necessary for the new building

1.2 Application

The HASP applies to all personnel involved in the above tasks who wish to gain access to active work areas, including but not limited to:

- General Contractor
- EBC employees and subcontractors;
- Client representatives; and
- Federal, state or local representatives.

1.3 Site Safety Plan Acceptance, Acknowledgment and Amendments

The project superintendent and the site safety officer are responsible for informing personnel (EBC employees and/or owner or owners representatives) entering the work area of the contents of this plan and ensuring that each person signs the safety plan acknowledging the on-site hazards and procedures required to minimize exposure to adverse effects of these hazards. A copy of the Acknowledgement Form is included in **Appendix A**.

Site conditions may warrant an amendment to the HASP. Amendments to the HASP are acknowledged by completing forms included in **Appendix B**.

1.4 Key Personnel - Roles and Responsibilities

Personnel responsible for implementing this Construction Health and Safety Plan are:

Name	Title	Address	Contact Numbers
Mr. Kevin Brussee	EBC Project Manager	1808 Middle Country Road Ridge, NY 11961	(631) 504-6000 Cell (631) 338-1749
Mr. Kevin Waters	EBC Site Safety Officer	1808 Middle Country Road Ridge, NY 11961	(631) 504-6000

The project manager is responsible for overall project administration and, with guidance from the site safety officer, for supervising the implementation of this CHASP. The site safety officer will conduct daily (tail gate or tool box) safety meetings at the project site and oversee daily safety issues. Each subcontractor and supplier (defined as an OSHA employer) is also responsible for the health and safety of its employees. If there is any dispute about health and safety or project activities, on-site personnel will attempt to resolve the issue. If the issue cannot be resolved at the site, then the project manager will be consulted.

The site safety officer is also responsible for coordinating health and safety activities related to hazardous material exposure on-site. The site safety officer is responsible for the following:

1. Educating personnel about information in this CHASP and other safety requirements to be observed during site operations, including, but not limited to, decontamination procedures, designation of work zones and levels of protection, air monitoring, fit testing, and emergency procedures dealing with fire and first aid.
2. Coordinating site safety decisions with the project manager.
3. Designating exclusion, decontamination and support zones on a daily basis.
4. Monitoring the condition and status of known on-site hazards and maintaining and implementing the air quality monitoring program specified in this CHASP.
5. Maintaining the work zone entry/exit log and site entry/exit log.
6. Maintaining records of safety problems, corrective measures and documentation of chemical exposures or physical injuries (the site safety officer will document these conditions in a bound notebook and maintain a copy of the notebook on-site).

The person who observes safety concerns and potential hazards that have not been addressed in the daily safety meetings should immediately report their observations/concerns to the site safety officer or appropriate key personnel.

2.0 SITE BACKGROUND AND SCOPE OF WORK

The Site is located at 138-142 North 10th Street in the Williamsburg section of Brooklyn, New York, and is identified as Block 2304, Lots 12, 13 and 15 on the New York City Tax Map. Figure 1 shows the Site location. The lots are rectangular shaped and approximately 5,625 sf with approximately 54 feet of street frontage on North 10th Street. The Site is located on the south side of North 10th Street between Berry Street and Bedford Avenue and is bordered by North 10th Street to the north; and residential buildings to the east, south and west. The Site is presently undeveloped and in use for storage of equipment and supplies associated with Apple Restoration and Waterproofing.

2.1 Prior Investigations

2.1.1 Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment was performed by EBC on September 6, 2013. The Phase I Report did not report any recognized environmental conditions in connection with the Site. The Phase I did recognize one environmental concern; the Site is listed with a Hazmat/Noise "E" restriction (E-138) with the descriptions of "underground storage tank testing protocol" and "window wall attenuation and alter ventilation."

The Phase I included a site history, utilizing Sanborn Maps from 1887 through 2007 and city directory information. The following Site history was established:

In 1887 the Site was vacant. From 1905 to 1980, the Site was developed with three residential dwellings. Beginning 1982, the Site has been vacant land and utilized for truck parking (1983-1987), for rag storage (1988-2007) and as a storage lot (2007 onwards).

2.1.2 Remedial Investigation Report

EBC performed the following scope of work at the Site in July of 2014:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Installed five soil borings across the Site, and collected ten soil samples for chemical analysis from the soil borings to evaluate soil quality;
3. Installed three groundwater monitoring wells throughout the Site and collected three groundwater samples for chemical analysis to evaluate groundwater quality;
4. Installed four soil gas implants and collected four soil gas samples for chemical analysis.

Summary of Environmental Findings

1. The elevation of the Site is approximately 27 feet above mean sea level.
2. Depth to groundwater is estimated to be approximately 20 feet below sidewalk grade.
3. Groundwater flow is generally north.
4. Depth to bedrock at the Site is greater than 100 feet.
5. The stratigraphy of the Site from the surface down consists of historic fill material to depths as great as 4 feet, underlain by native brown sand with gravel.
6. Ten soil/fill samples were collected and their results were compared to NYSDEC Unrestricted Use Soil Cleanup Objectives and Restricted Residential Use Soil Cleanup Objectives as presented in 6NYCRR Part 375-6.8 and CP51. Soil/fill samples detected one VOC, acetone (190 µg/kg) in one shallow soil sample at concentration exceeding Unrestricted Use SCOs. Several other VOCs were detected at trace concentrations. Six

SVOCs, including benz(a)anthracene (max. of 21,000 µg/kg), benzo(a)pyrene (max. of 17,000 µg/kg), benzo(b)fluoranthene (max. of 24,000 µg/kg), benzo(k)fluoranthene (7,600 µg/kg), chrysene (max. of 19,000 µg/kg), and indeno(1,2,3-cd)pyrene (6,100 µg/kg), were detected above Restricted Residential Use SCOs within all five of the shallow soil samples and two of the subsurface samples that extended to four feet deep. All SVOCs in deeper soils (12-14 feet bgs) were below Unrestricted Use SCOs. Pesticides 4'4'-DDD (max. 510 µg/kg), 4'4'-DDE (94 µg/kg), 4'4'-DDT (2,000 µg/kg) and Dieldrin (180 µg/kg) were detected above UUSCOs in shallow soils in two borings (B1 and B2). Several metals including barium (837 µg/kg), chromium (max. of 34.6 mg/kg), copper (max. of 71.7 mg/kg), lead (max. of 1,170 mg/kg), mercury (max. of 0.69 mg/kg), and zinc (max. of 480 mg/kg) exceeded Unrestricted Use SCOs within shallow soil samples. Of these metals, barium and lead also exceeded Restricted Residential Use SCOs. No metals exceeded Restricted Residential SCOs in deeper soil samples. Overall, the soil results were consistent with data identified at sites with urban fill material in NYC.

7. Three groundwater samples results were compared to New York State 6NYCRR Part 703.5 Class GA groundwater quality standards (GQS). Groundwater samples showed no PCBs or pesticides at detectable concentrations. Several VOCs were identified at trace concentrations and all were below their respective GQSs. Five SVOCs, including benz(a)anthracene (max. of 0.91 µg/L), benzo(b)fluoranthene (max. of 1.2 µg/L), benzo(k)fluoranthene (max. of 0.49 µg/L), and chrysene (0.9 µg/L) and indeno(1,2,3-cd)pyrene (max. of 0.43 µg/L) were detected above GQS in two groundwater samples. Several metals were identified, but iron (0.89 mg/L), manganese (max. of 4.77 mg/L) and sodium (max. of 81.1 mg/L) exceeded their respective GQS.
8. Soil vapor results collected during the RI were compared to the compounds listed in Vapor Intrusion Matrices in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion, dated October 2006. Total concentrations of petroleum-related VOCs (BTEX) ranged from 30.25 µg/m³ to 332.28 µg/m³. Most compounds were detected below 100 µg/m³ except for acetone at 261 µg/m³ and hexane at 2700 µg/m³. The CVOC trichloroethylene (TCE) was detected in three of the soil gas samples, but at levels below the guidance value. Tetrachloroethylene was detected in all four soil gas samples ranging in concentration from 0.407 µg/m³ to 2.17 µg/m³. Carbon tetrachloride (maximum of 0.88 µg/m³) was detected in all four soil gas samples. 1,1,1-trichloroethane (maximum of 53.4 µg/m³) was detected in all four soil gas samples. The concentrations of all chlorinated compounds were below the monitoring level ranges established within the NYSDOH Final Guidance on Soil Vapor Intrusion.

For more detailed results, consult the RIR. Based on an evaluation of the data and information from the RIR and this RAWP, disposal of significant amounts of hazardous waste is not suspected at this site.

2.2 Redevelopment Plans

The development project consists of redeveloping the lot with a new 6-story residential apartment building with a full cellar level. The building will cover the north 80.5 ft of the lot, leaving 19.5 ft of rear yard space, and will have a full height basement level beneath the entire building footprint. Excavation for the cellar level will extend to an average depth of approximately 12 feet below grade. The cellar level will consist of a mechanical area, as well as tenant's storage, elevator, stairwells, two recreation rooms, and two bathrooms. The first floor

will consist of the residential lobby, two tenant one-car parking garages, and two residential apartments. Floors 2 through 6 will consist of residential apartments.

The building and cellar will cover 4,480 square feet of the lot and will require excavation to a depth of at approximately 11.5 feet below grade; therefore, an estimated 1,908 cubic yards (1,431 tons) of soil will require excavation for the new building's cellar. The water table is expected at approximately 20 feet below grade surface (bgs), and will not be encountered during excavation. Layout of the redevelopment plans for the cellar level as well as the proposed building's front elevation drawing are presented in Figure 3. The current zoning designation is R6A. The proposed use is consistent with existing zoning for the property.

2.3 Description of Remedial Action Plan

Site activities included within the Remedial Action Plan that are included within the scope of this HASP include the following:

The proposed remedial action will consist of:

1. Preparation of a Community Protection Statement and performance of all required NYC VCP Citizen Participation activities according to an approved Citizen Participation Plan.
2. Performance of a Community Air Monitoring Program for particulates and volatile organic carbon compounds.
3. Establishment of Site-Specific (Track 4) Soil Cleanup Objectives (SCOs).
4. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
5. Completion of a Waste Characterization Study prior to excavation activities. Waste characterization soil samples will be collected at a frequency dictated by disposal facility. A Waste Characterization Report documenting sample procedures, location, analytical results shall be submitted to NYCOER prior to start of remedial action.
6. Excavation and removal of soil/fill exceeding Track 1 Restricted Residential Use. For development purposes, 4,480 sf of the Site will be excavated to depth of approximately 12 feet for the new building's footings and foundation. The remaining portions will be excavated to a depth ranging from 6 to 12 ft and will feature stone pavers on gravel (in the area excavated to 12 ft bgs) and exposed soil (in the area excavated to 6 ft bgs). Approximately 3,547 tons of soil will be removed.
7. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID. Appropriate segregation of excavated media on-Site.
8. Removal of underground storage tanks (if encountered) and closure of petroleum spills (if evidence of a spill/leak is encountered during Site excavation) in compliance with applicable local, State and Federal laws and regulations.
9. Transportation and off-Site disposal of all soil/fill material at permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media on-Site.
10. Collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of SCOs.
11. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.

12. Installation of a vapor barrier system below the concrete slab underneath the building as well as behind foundation walls of the proposed building. The vapor barrier will consist of the Preprufe 300R system as manufactured by Grace or equivalent system. Preprufe 300R is a 1.2 mm (0.046 in) thick HDPE film with a pressure sensitive adhesive that bonds to the poured concrete;
13. Construction and maintenance of an engineered composite cover consisting of 4 inch thick concrete building slab and 4-inch concrete cap in areas outside the building footprint to prevent human exposure to residual soil/fill remaining at the Site;
14. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.
15. Performance of all activities required for the remedial action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations;
16. Submission of a Remedial Action Report (RAR) that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, and describes all Engineering and Institutional Controls to be implemented at the Site, and lists any changes from this RAWP.
17. Submission of an approved Site Management Plan (SMP) in the RAR for long-term management of residual contamination, including plans for operation, maintenance, monitoring, inspection and certification of Engineering and Institutional Controls and reporting at a specified frequency.
18. The property will continue to be registered with an E-Designation at the NYC Buildings Department. Establishment of Engineering Controls and Institutional Controls in this RAWP and a requirement that management of these controls must be in compliance with an approved SMP. Institutional Controls will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without OER-approval.

3.0 HAZARD ASSESSMENT

This section identifies the hazards associated with the proposed scope of work, general physical hazards that can be expected at most sites; and presents a summary of documented or potential chemical hazards at the site. Every effort must be made to reduce or eliminate these hazards. Those that cannot be eliminated must be guarded against using engineering controls and/or personal protective equipment.

3.1 Physical Hazards

3.1.1 Tripping Hazards

An area of risk associated with on-site activities are presented by uneven ground, concrete, curbstones or equipment which may be present at the site thereby creating a potential tripping hazard. During intrusive work, care should be taken to mark or remove any obstacles within the exclusion zone.

3.1.2 Climbing Hazards

During site activities, workers may have to work on excavating equipment by climbing. The excavating contractor will conform with any applicable NIOSH and OSHA requirements or climbing activities.

3.1.3 Cuts and Lacerations

Field activities that involve excavating activities usually involve contact with various types of machinery. A first aid kit approved by the American Red Cross will be available during all intrusive activities.

3.1.4 Lifting Hazards

Improper lifting by workers is one of the leading causes of industrial injuries. Field workers in the excavation program may be required to lift heavy objects. Therefore, all members of the field crew should be trained in the proper methods of lifting heavy objects. All workers should be cautioned against lifting objects too heavy for one person.

3.1.5 Utility Hazards

Before conducting any excavation, the excavation contractor will be responsible for locating and verifying all existing utilities at each excavation.

3.1.6 Traffic Hazards

All traffic, vehicular and pedestrian, shall be maintained and protected at all times consistent with local, state and federal agency regulations regarding such traffic and in accordance with NYCDOT guidelines. The excavation contractor shall carry on his operations without undue interference or delays to traffic. The excavation contractor shall furnish all labor, materials, guards, barricades, signs, lights, and anything else necessary to maintain traffic and to protect his work and the public, during operations.

3.2 Work in Extreme Temperatures

Work under extremely hot or cold weather conditions requires special protocols to minimize the chance that employees will be affected by heat or cold stress.

3.2.1 Heat Stress

The combination of high ambient temperature, high humidity, physical exertion, and personal protective apparel, which limits the dissipation of body heat and moisture, can cause heat stress.

The following prevention, recognition and treatment strategies will be implemented to protect personnel from heat stress. Personnel will be trained to recognize the symptoms of heat stress and to apply the appropriate treatment.

1. Prevention

- a. Provide plenty of fluids. Available in the support zone will be a 50% solution of fruit punch and water or plain water.
- b. Work in Pairs. Individuals should avoid undertaking any activity alone.
- c. Provide cooling devices. A spray hose and a source of water will be provided to reduce body temperature, cool protective clothing and/or act as a quick-drench shower in case of an exposure incident.
- d. Adjustment of the work schedule. As is practical, the most labor-intensive tasks should be carried out during the coolest part of the day.

2. Recognition and Treatment

a. Heat Rash (or prickly heat):

Cause: Continuous exposure to hot and humid air, aggravated by chafing clothing.

Symptoms: Eruption of red pimples around sweat ducts accompanied by intense itching and tingling.

Treatment: Remove source or irritation and cool skin with water or wet cloths.

b. Heat Cramps (or heat prostration)

Cause: Profuse perspiration accompanied by inadequate replenishment of body water and electrolytes.

Symptoms: Muscular weakness, staggering gait, nausea, dizziness, shallow breathing, pale and clammy skin, approximately normal body temperature.

Treatment: Perform the following while making arrangement for transport to a medical facility. Remove the worker to a contamination reduction zone. Remove protective clothing. Lie worker down on back in a cool place and raise feet 6 to 12 inches. Keep warm, but loosen all clothing. If conscious, provide sips of salt-water solution, using one teaspoon of salt in 12 ounces of water. Transport to a medical facility.

c. Heat Stroke

Cause: Same as heat exhaustion. This is also an extremely serious condition.

Symptoms: Dry hot skin, dry mouth, dizziness, nausea, headache, rapid pulse.

Treatment: Cool worker immediately by immersing or spraying with cool water or sponge bare skin after removing protective clothing. Transport to hospital.

3.2.2 Cold Exposure

Exposure to cold weather, wet conditions and extreme wind-chill factors may result in excessive loss of body heat (hypothermia) and /or frostbite. To guard against cold exposure and to prevent cold injuries, appropriate warm clothing should be worn, warm shelter must be readily available, rest periods should be adjusted as needed, and the physical conditions of on-site field personnel should be closely monitored. Personnel and supervisors working on-site will be made aware of the signs and symptoms of frost bite and hypothermia such as shivering, reduced blood pressure, reduced coordination, drowsiness, impaired judgment, fatigue, pupils dilated but reactive to light and numbing of the toes and fingers.

3.3 Chemical Hazards

Soil collected from the site as part of several subsurface investigation performed at the site have revealed elevated levels of SVOCs, metals, PCBs and pesticides in historic fill at the Site.

VOCs reported to be present at elevated concentrations in historic fill material at the Site include the following:

Acetone

SVOCs reported to be present at elevated concentrations in historic fill material at the Site include the following:

Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene
Benzo(k)fluoranthene	Chrysene	Indeno(1,2,3-cd)pyrene

Pesticides reported to be present at elevated concentrations in historic fill material at the Site include the following:

4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin
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Metals reported to be present at elevated concentrations in historic fill material at the Site include the following:

Barium	Chromium	Copper	Lead	Mercury	Zinc
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The primary routes of exposure to identified contaminants in soil to on-site construction workers are through inhalation, ingestion and absorption.

Appendix C includes information sheets for all detected chemicals that may be encountered at the site.

3.3.1 Respirable Dust

Dust may be generated from vehicular traffic and/or excavation activities. If visible observation detects elevated levels of dust, a program of wetting will be employed by the site safety officer. If elevated dust levels persist, the site safety office will employ dust monitoring using a particulate monitor (Miniram or equivalent). If monitoring detects concentrations greater than 150 µg/m³ over daily background, the site safety officer will take corrective actions as defined herein, including the use of water for dust suppression and if this is not effective, requiring workers to wear APRs with efficiency particulate air (HEPA) cartridges.

Absorption pathways for dust and direct contact with soils or groundwater will be mitigated with the implementation of latex gloves, hand washing and decontamination exercises when necessary.

3.3.2 *Dust Control and Monitoring During Earthwork*

Dust generated during excavation activities or other earthwork may contain contaminants identified in soils at the site. Dust will be controlled by wetting the working surface with water. Calcium chloride may be used if the problem cannot be controlled with water. Air monitoring and dust control techniques are specified in a site specific Dust Control Plan (if applicable). Site workers will not be required to wear APR's unless dust concentrations are consistently over 150 $\mu\text{g}/\text{m}^3$ over site-specific background in the breathing zone as measured by a dust monitor unless the site safety officer directs workers to wear APRs. The site safety officer will use visible dust as an indicator to implement the dust control plan.

3.3.3 *Organic Vapors*

Although only one VOCs was detected within one of the shallow soil samples collected at the Site, the site safety officer will periodically monitor organic vapors with a Photo-ionization Detector (PID) during excavation activities to determine whether organic vapor concentrations exceed action levels shown in Section 5 and/or the Community Air Monitoring Plan.

4.0 PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) shall be selected in accordance with the site air monitoring program, OSHA 29 CFR 1910.120(c), (g), and 1910.132. Protective equipment shall be NIOSH approved and respiratory protection shall conform to OSHA 29 CFR Part 1910.133 and 1910.134 specifications; head protection shall conform to 1910.135; eye and face protection shall conform to 1910.133; and foot protection shall conform to 1910.136. The only true difference among the levels of protection from D thru B is the addition of the type of respiratory protection. **It is anticipated that work will be performed in Level D PPE.**

4.1 Level D

Level D PPE shall be donned when the atmosphere contains no known hazards and work functions preclude splashes, immersion, or the potential for inhalation of, or contact with, hazardous concentrations of harmful chemicals. Level D PPE consists of:

- standard work clothes, coveralls, or tyvek, as needed;
- steel toe and steel shank work boots;
- hard hat;
- gloves, as needed;
- safety glasses;
- hearing protection;
- equipment replacements are available as needed.

4.2 Level C

Level C PPE shall be donned when sustained concentrations of measured total organic vapors in the breathing zone exceed background concentrations (using a portable OVA, or equivalent), by more than 5 ppm. The specifications on the APR filters used must be appropriate for contaminants identified or expected to be encountered. Level C PPE shall be donned when the identified contaminants have adequate warning properties and criteria for using APR have been met. Level C PPE consists of:

- chemical resistant or coated tyvek coveralls;
- steel-toe and steel-shank workboots;
- chemical resistant overboots or disposable boot covers;
- disposable inner gloves (surgical gloves);
- disposable outer gloves;
- full face APR fitted with organic vapor/dust and mist filters or filters appropriate for the identified or expected contaminants;
- hard hat;
- splash shield, as needed; and,
- ankles/wrists taped with duct tape.

The site safety officer will verify if Level C is appropriate by checking organic vapor concentrations using compound and/or class-specific detector tubes.

The exact PPE ensemble is decided on a site-by-site basis by the Site Safety Officer with the intent to provide the most protective and efficient worker PPE.

4.3 Activity-Specific Levels of Personal Protection

The required level of PPE is activity-specific and is based on air monitoring results (Section 4.0) and properties of identified or expected contaminants. **It is expected that site work will be performed in Level D.** If air monitoring results indicate the necessity to upgrade the level of protection, engineering controls (i.e. Facing equipment away from the wind and placing site personnel upwind of excavations, active venting, etc.) will be implemented before requiring the use of respiratory protection.

5.0 AIR MONITORING AND ACTION LEVELS

29 CFR 1910.120(h) specifies that monitoring shall be performed where there may be a question of employee exposure to hazardous concentrations of hazardous substances in order to assure proper selection of engineering controls, work practices and personal protective equipment so that employees are not exposed to levels which exceed permissible exposure limits, or published exposure levels if there are no permissible exposure limits, for hazardous substances.

5.1 Air Monitoring Requirements

If excavation work is performed, air will be monitored for VOCs with a portable ION Science 3000EX photo-ionization detector, or the equivalent. If necessary, Lower Explosive Limit (LEL) and oxygen will be monitored with a Combustible Gas Indicator (CGI). If appropriate, fugitive dust will be monitored using a MiniRam Model PDM-3 aerosol monitor. Air will be monitored when any of the following conditions apply:

- initial site entry;
- during any work where a potential IDLH condition or flammable atmosphere could develop;
- excavation work begins on another portion of the site;
- contaminants, other than those previously identified, have been discovered;
- each time a different task or activity is initiated;
- during trenching and/or excavation work.

The designated site safety officer will record air monitoring data and ensure that air monitoring instruments are calibrated and maintained in accordance with manufacturer's specifications. Instruments will be zeroed daily and checked for accuracy. Monitoring results will be recorded in a field notebook and will be transferred to instrument reading logs.

5.2 Work Stoppage Responses

The following responses will be initiated whenever one or more of the action levels necessitating a work stoppage are exceeded:

- 1 The SSO will be consulted immediately
- 2 All personnel (except as necessary for continued monitoring and contaminant migration, if applicable) will be cleared from the work area (eg from the exclusion zone).
- 3 Monitoring will be continued until intrusive work resumes.

5.3 Action Levels During Excavation Activities

Instrument readings will be taken in the breathing zone above the excavation pit unless otherwise noted. Each action level is independent of all other action levels in determining responses.

Organic Vapors (PID)	LEL %	Responses
0-1 ppm above background	0%	<ul style="list-style-type: none"> • Continue excavating • Level D protection • Continue monitoring every 10 minutes
1-5 ppm Above Background, Sustained Reading	1-10%	<ul style="list-style-type: none"> • Continue excavating • Go to Level C protection or employ

		<p>engineering controls</p> <ul style="list-style-type: none"> • Continue monitoring every 10 minutes
5-25 ppm Above Background, Sustained Reading	10-20%	<ul style="list-style-type: none"> • Discontinue excavating, unless PID is only action level exceeded. • Level C protection or employ engineering controls • Continue monitoring for organic vapors 200 ft downwind • Continuous monitoring for LEL at excavation pit
>25 ppm Above Background, Sustained Reading	>20%	<ul style="list-style-type: none"> • Discontinue excavating • Withdraw from area, shut off all engine ignition sources. • Allow pit to vent • Continuous monitoring for organic vapors 200 ft downwind.

Notes: Air monitoring will occur in the breathing zone 30 inches above the excavation pit. Readings may also be taken in the excavation pit but will not be used for action levels.

If action levels for any one of the monitoring parameters are exceeded, the appropriate responses listed in the right hand column should be taken. If instrument readings do not return to acceptable levels after the excavation pit has been vented for a period of greater than one-half hour, a decision will then be made whether or not to seal the pit with suppressant foam.

If, during excavation activities, downwind monitoring PID readings are greater than 5 ppm above background for more than one-half hour, excavation will stop until sustained levels are less than 5 ppm (see Community Air Monitoring Plan).

6.0 SITE CONTROL

6.1 Work Zones

The primary purpose of site controls is to establish the perimeter of a hazardous area, to reduce the migration of contaminants into clean areas, and to prevent access or exposure to hazardous materials by unauthorized persons. When operations are to take place involving hazardous materials, the site safety officer will establish an exclusion zone, a decontamination zone, and a support zone. These zones "float" (move around the site) depending on the tasks being performed on any given day. The site safety officer will outline these locations before work begins and when zones change. The site safety officer records this information in the site log book.

Due to the dimensions of the Site and the work area, it is expected that an exclusion zone will include the entire fenced area with the exception of the construction entrance area, which will serve as the decontamination zone. A support zone if needed will be located outside of the fenced area. All onsite workers during excavation of historic fill materials must provide evidence of OSHA 24 or 40-hour Hazardous Waste Operations and Emergency Response Operations training to conduct work within the exclusion zone established by the site safety officer. The exclusion zone is defined by the site safety officer but will typically be a 50-foot area around work activities. Gross decontamination (as determined by the site Health and Safety Officer) is conducted in the exclusion zone; all other decontamination is performed in the decontamination zone or trailer, if provided.

Protective equipment is removed in the decontamination zone. Disposable protective equipment is stored in receptacles staged in the decontamination zone, and non-disposable equipment is decontaminated. All personnel and equipment exit the exclusion zone through the decontamination zone. If a decontamination trailer is provided the first aid equipment, an eye wash unit, and drinking water are kept in the decontamination trailer.

The support zone is used for vehicle parking, daily safety meetings, and supply storage. Eating, drinking, and smoking are permitted only in the support zone. When a decontamination trailer is not provided, the eye wash unit, first aid equipment, and drinking water are kept at a central location designated by the site safety officer.

7.0 CONTINGENCY PLAN/EMERGENCY RESPONSE PLAN

Site personnel must be prepared in the event of an emergency. Emergencies can take many forms: illnesses, injuries, chemical exposure, fires, explosions, spills, leaks, releases of harmful contaminants, or sudden changes in the weather.

Emergency telephone numbers and a map to the hospital will be posted in the command post. Site personnel should be familiar with the emergency procedures, and the locations of site safety, first aid, and communication equipment.

7.1 Emergency Equipment On-site

Private telephones:	Site personnel.
Two-way radios:	Site personnel where necessary.
Emergency Alarms:	On-site vehicle horns*.
First aid kits:	On-site, in vehicles or office.
Fire extinguisher:	On-site, in office or on equipment.

* Horns: Air horns will be supplied to personnel at the discretion of the project superintendent or site safety officer.

7.2 Emergency Telephone Numbers

General Emergencies	911
Police	911
NYC Fire Department	911
Woodhull Medical Center	1-718-963-8000
NYSDEC Spills Hotline	1-800-457-7362
NYSDEC Project Manager	(718) 482-4010
NYC Department of Health	(212) 676-2400
National Response Center	1-800-424-8802
Poison Control	1-800-222-1222
Project Manager	1-631-504-6000
Site Safety Officer	1-631-504-6000

7.3 Personnel Responsibilities During an Emergency

The project manager is primarily responsible for responding to and correcting any emergency situations. However, in the absence of the project manager, the site safety officer shall act as the project manager's on-site designee and perform the following tasks:

- Take appropriate measures to protect personnel including: withdrawal from the exclusion zone, evacuate and secure the site, or upgrade/downgrade the level of protective clothing and respiratory protection;
- Ensure that appropriate federal, state, and local agencies are informed and emergency response plans are coordinated. In the event of fire or explosion, the local fire department should be summoned immediately. If toxic materials are released to the air, the local authorities should be informed in order to assess the need for evacuation;
- Ensure appropriate decontamination, treatment, or testing for exposed or injured

evacuated safely. The head count will be correlated to the site and/or exclusion zone entry/exit log.

- If emergency site evacuation is necessary, all personnel are to escape the emergency situation and decontaminate to the maximum extent practical.

7.7 Spill Control Procedures

Spills associated with site activities may be attributed to project equipment and include gasoline, diesel and hydraulic oil. In the event of a leak or a release, site personnel will inform their supervisor immediately, locate the source of spillage and stop the flow if it can be done safely. A spill containment kit including absorbent pads, booms and/or granulated speedy dry absorbent material will be available to site personnel to facilitate the immediate recovery of the spilled material. Daily inspections of site equipment components including hydraulic lines, fuel tanks, etc. will be performed by their respective operators as a preventative measure for equipment leaks and to ensure equipment soundness. In the event of a spill, site personnel will immediately notify the NYSDEC (1-800-457-7362), and a spill number will be generated.

7.8 Vapor Release Plan

If work zone organic vapor (excluding methane) exceeds 5 ppm, then a downwind reading will be made either 200 feet from the work zone or at the property line, whichever is closer. If readings at this location exceed 5 ppm over background, the work will be stopped.

If 5 ppm of VOCs are recorded over background on a PID at the property line, then an off-site reading will be taken within 20 feet of the nearest residential or commercial property, whichever is closer. If efforts to mitigate the emission source are unsuccessful for 30 minutes, then the designated site safety officer will:

- contact the local police;
- continue to monitor air every 30 minutes, 20 feet from the closest off-site property. If two successive readings are below 5 ppm (non-methane), off-site air monitoring will be halted.
- All property line and off site air monitoring locations and results associated with vapor releases will be recorded in the site safety log book.

APPENDIX A
SITE SAFETY ACKNOWLEDGEMENT FORM

DAILY BRIEFING SIGN-IN SHEET

Date: _____ Person Conducting Briefing: _____

Project Name and Location: _____

1. AWARENESS (topics discussed, special safety concerns, recent incidents, etc...):

2. OTHER ISSUES (HASp changes, attendee comments, etc...):

3. ATTENDEES (Print Name):

1.	11.
2.	12.
3.	13.
4.	14.
5.	15.
6.	16.
7.	17.
8.	18.
9.	19.
10.	20.

APPENDIX B
SITE SAFETY PLAN AMENDMENTS

SITE SAFETY PLAN AMENDMENT FORM

Site Safety Plan Amendment #: _____

Site Name: _____

Reason for Amendment: _____

Alternative Procedures: _____

Required Changes in PPE: _____

Project Superintendent (signature)

Date

Health and Safety Consultant (signature)

Date

Site Safety Officer (signature)

Date

APPENDIX C

CHEMICAL HAZARDS

CHEMICAL HAZARDS

The attached International Chemical Safety Cards are provided for contaminants of concern that have been identified in soils and/or groundwater at the site.

International Chemical Safety Cards

ACETONE

ICSC: 0087



2-Propanone
Dimethyl ketone
Methyl ketone
 C_3H_6O / CH_3COCH_3
Molecular mass: 58.1

ICSC # 0087
CAS # 67-64-1
RTECS # [AL3150000](#)
UN # 1090
EC # 606-001-00-8
April 22, 1994 Validated
Fi, review at IHE: 10/09/89



TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable.	NO open flames, NO sparks, and NO smoking.	Powder, alcohol-resistant foam, water in large amounts, carbon dioxide.
EXPLOSION	Vapour/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE			
•INHALATION	Sore throat. Cough. Confusion. Headache. Dizziness. Drowsiness. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Dry skin.	Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES	Redness. Pain. Blurred vision. Possible corneal damage.	Safety spectacles or face shield . Contact lenses should not be worn.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Nausea. Vomiting. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: self-contained breathing apparatus. Ventilation. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Then wash away with plenty of water.	Fireproof. Separated from strong oxidants. Store in an area without drain or sewer access.	F symbol Xi symbol R: 11-36-66-67 S: 2-9-16-26 UN Hazard Class: 3 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0087

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ACETONE

ICSC: 0087

<p>I M P O R T A N T D A T A</p>	<p>PHYSICAL STATE; APPEARANCE: COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.</p> <p>PHYSICAL DANGERS: The vapour is heavier than air and may travel along the ground; distant ignition possible.</p> <p>CHEMICAL DANGERS: The substance can form explosive peroxides on contact with strong oxidants such as acetic acid, nitric acid, hydrogen peroxide. Reacts with chloroform and bromoform under basic conditions, causing fire and explosion hazard. Attacks plastic.</p> <p>OCCUPATIONAL EXPOSURE LIMITS: TLV: 500 ppm as TWA, 750 ppm as STEL; A4 (not classifiable as a human carcinogen); BEI issued; (ACGIH 2004). MAK: 500 ppm 1200 mg/m³ Peak limitation category: I(2); Pregnancy risk group: D; (DFG 2006). OSHA PEL[±]: TWA 1000 ppm (2400 mg/m³) NIOSH REL: TWA 250 ppm (590 mg/m³) NIOSH IDLH: 2500 ppm 10%LEL See: 67641</p>	<p>ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation and through the skin.</p> <p>INHALATION RISK: A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.</p> <p>EFFECTS OF SHORT-TERM EXPOSURE: The vapour irritates the eyes and the respiratory tract. The substance may cause effects on the central nervous system , liver , kidneys and gastrointestinal tract .</p> <p>EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the blood and bone marrow .</p>
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<p>PHYSICAL PROPERTIES</p>	<p>Boiling point: 56°C Melting point: -95°C Relative density (water = 1): 0.8 Solubility in water: miscible Vapour pressure, kPa at 20°C: 24</p>	<p>Relative vapour density (air = 1): 2.0 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.2 Flash point: -18°C c.c. Auto-ignition temperature: 465°C Explosive limits, vol% in air: 2.2-13 Octanol/water partition coefficient as log Pow: -0.24</p>
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<p>ENVIRONMENTAL DATA</p>	
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NOTES

Use of alcoholic beverages enhances the harmful effect.

Transport Emergency Card: TEC (R)-30S1090

NFPA Code: H 1; F 3; R 0;

Card has been partially updated in July 2007: see Occupational Exposure Limits.
Card has been partially updated in January 2008: see Storage.

ADDITIONAL INFORMATION

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ICSC: 0087 **ACETONE**

(C) IPCS, CEC, 1994

<p>IMPORTANT LEGAL NOTICE:</p>	<p>Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.</p>
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International Chemical Safety Cards

INDENO(1,2,3-cd)PYRENE

ICSC: 0730



o-Phenylenepyrene
2,3-Phenylenepyrene
 $C_{22}H_{12}$
Molecular mass: 276.3

ICSC # 0730
CAS # 193-39-5
RTECS # [NK9300000](#)
March 25, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE			In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
• INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
• SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
• EYES		Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
• INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Well closed.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0730

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

INDENO(1,2,3-cd)PYRENE

ICSC: 0730

I	PHYSICAL STATE; APPEARANCE: YELLOW CRYSTALS	ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation of its aerosol and through the skin.
M	PHYSICAL DANGERS:	INHALATION RISK:
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CHEMICAL DANGERS:
Upon heating, toxic fumes are formed.

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.
MAK:
Carcinogen category: 2;
(DFG 2004).

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 536°C
Melting point: 164°C
Solubility in water:
none

Octanol/water partition coefficient as log Pow: 6.58

ENVIRONMENTAL DATA

This substance may be hazardous to the environment; special attention should be given to air quality and water quality. Bioaccumulation of this chemical may occur in fish.



NOTES

Indeno(1,2,3-cd)pyrene is present as a component of polycyclic aromatic hydrocarbons (PAH) content in the environment usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco. ACGIH recommends environment containing Indeno(1,2,3-c,d)pyrene should be evaluated in terms of the TLV-TWA for coal tar pitch volatile, as benzene soluble 0.2 mg/m³. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

ADDITIONAL INFORMATION

ICSC: 0730

INDENO(1,2,3-cd)PYRENE

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:

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International Chemical Safety Cards

CHRYSENE

ICSC: 1672



Benzoaphenanthrene
1,2-Benzophenanthrene
1,2,5,6-Dibenzonaphthalene
 $C_{18}H_{12}$
Molecular mass: 228.3

ICSC # 1672
CAS # 218-01-9
RTECS # [GC0700000](#)
UN # 3077
EC # 601-048-00-0
October 12, 2006 Validated



TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray. Dry powder. Foam. Carbon dioxide.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety goggles	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: P3 filter respirator for toxic particles. Do NOT let this chemical enter the environment. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	Separated from strong oxidants, Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access.	T symbol N symbol R: 45-68-50/53 S: 53-45-60-61 UN Hazard Class: 9 UN Packing Group: III Signal: Warning Aqua-Cancer Suspected of causing cancer Very toxic to aquatic life with long lasting effects Very toxic to aquatic life

SEE IMPORTANT INFORMATION ON BACK

International Chemical Safety Cards

CHRYSENE

ICSC: 1672

<p>I M P O R T A N T D A T A</p>	<p>PHYSICAL STATE; APPEARANCE: COLOURLESS TO BEIGE CRYSTALS OR POWDER</p> <p>PHYSICAL DANGERS: Dust explosion possible if in powder or granular form, mixed with air.</p> <p>CHEMICAL DANGERS: The substance decomposes on burning producing toxic fumes Reacts violently with strong oxidants</p> <p>OCCUPATIONAL EXPOSURE LIMITS: TLV: A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2006). MAK not established.</p>	<p>ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.</p> <p>INHALATION RISK: A harmful concentration of airborne particles can be reached quickly when dispersed</p> <p>EFFECTS OF SHORT-TERM EXPOSURE:</p> <p>EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: This substance is possibly carcinogenic to humans.</p>
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<p>PHYSICAL PROPERTIES</p>	<p>Boiling point: 448°C Melting point: 254 - 256°C Density: 1.3 g/cm³</p>	<p>Solubility in water: very poor Octanol/water partition coefficient as log Pow: 5.9</p>
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<p>ENVIRONMENTAL DATA</p>	<p>The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in seafood. It is strongly advised that this substance does not enter the environment.</p>	
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NOTES

Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home. This substance does not usually occur as a pure substance but as a component of polyaromatic hydrocarbon (PAH) mixtures. Human population studies have associated PAH's exposure with cancer and cardiovascular diseases.

Transport Emergency Card: TEC (R)-90GM7-III

ADDITIONAL INFORMATION

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ICSC: 1672

CHRYSENE

(C) IPCS, CEC, 1994

<p>IMPORTANT LEGAL NOTICE:</p>	<p>Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.</p>
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International Chemical Safety Cards

BENZO(k)FLUORANTHENE

ICSC: 0721



Dibenzo(b,jk)fluorene
8,9-Benzofluoranthene
11,12-Benzofluoranthene
 $C_{20}H_{12}$
Molecular mass: 252.3

ICSC # 0721
CAS # 207-08-9
RTECS # [DF6350000](#)
EC # 601-036-00-5
March 25, 1999 Peer reviewed



TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE			In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0721

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(k)FLUORANTHENE

ICSC: 0721

I	PHYSICAL STATE; APPEARANCE: YELLOW CRYSTALS	ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation of its aerosol and through the skin.
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PHYSICAL DANGERS:

CHEMICAL DANGERS:

Upon heating, toxic fumes are formed.

OCCUPATIONAL EXPOSURE LIMITS:

TLV not established.

MAK:

Carcinogen category: 2;
(DFG 2004).

INHALATION RISK:

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 480°C
Melting point: 217°C
Solubility in water:
none

Octanol/water partition coefficient as log Pow: 6.84

ENVIRONMENTAL DATA

This substance may be hazardous to the environment; special attention should be given to air quality and water quality. Bioaccumulation of this chemical may occur in crustacea and in fish.



NOTES

Benzo(k)fluoranthene is present as a component of polycyclic aromatic hydrocarbons (PAH) content in the environment usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco. ACGIH recommends environment containing benzo(k)fluoranthene should be evaluated in terms of the TLV-TWA for coal tar pitch volatile, as benzene soluble 0.2 mg/m³. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

ADDITIONAL INFORMATION

ICSC: 0721

BENZO(k)FLUORANTHENE

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:

Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(b)FLUORANTHENE

ICSC: 0720



Benz(e)acephenanthrylene
 2,3-Benzofluoranthene
 Benzo(e)fluoranthene
 3,4-Benzofluoranthene
 $C_{20}H_{12}$
 Molecular mass: 252.3

ICSC # 0720
 CAS # 205-99-2
 RTECS # [CU1400000](#)
 EC # 601-034-00-4
 March 25, 1999 Peer reviewed



TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE			In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
• INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
• SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
• EYES		Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
• INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0720

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(b)FLUORANTHENE

ICSC: 0720

I	PHYSICAL STATE; APPEARANCE: COLOURLESS CRYSTALS	ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation
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PHYSICAL DANGERS:

CHEMICAL DANGERS:

Upon heating, toxic fumes are formed.

OCCUPATIONAL EXPOSURE LIMITS:

TLV: A2 (suspected human carcinogen); (ACGIH 2004).

MAK:

Carcinogen category: 2;
(DFG 2004).

of its aerosol and through the skin.

INHALATION RISK:

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

This substance is possibly carcinogenic to humans. May cause genetic damage in humans.

PHYSICAL PROPERTIES

Boiling point: 481°C
Melting point: 168°C
Solubility in water:
none

Octanol/water partition coefficient as log Pow: 6.12

ENVIRONMENTAL DATA

This substance may be hazardous to the environment; special attention should be given to air quality and water quality.



NOTES

Benzo(b)fluoranthene is present as a component of polycyclic aromatic hydrocarbons (PAH) content in the environment usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco. ACGIH recommends environment containing benzo(b)fluoranthene should be evaluated in terms of the TLV-TWA for coal tar pitch volatile, as benzene soluble 0.2 mg/m³. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

ADDITIONAL INFORMATION

ICSC: 0720

BENZO(b)FLUORANTHENE

(C) IPCS, CEC, 1994

IMPORTANT LEGAL NOTICE:

Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(a)PYRENE

ICSC: 0104



Benz(a)pyrene
3,4-Benzopyrene
Benzo(d,e,f)chrysene
 $C_{20}H_{12}$
Molecular mass: 252.3

ICSC # 0104
CAS # 50-32-8
RTECS # [DJ3675000](#)
EC # 601-032-00-3
October 17, 2005 Peer reviewed



TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray, foam, powder, carbon dioxide.
EXPLOSION			
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	AVOID ALL CONTACT! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN	MAY BE ABSORBED!	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety goggles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	Separated from strong oxidants.	T symbol N symbol R: 45-46-60-61-43-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0104

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(a)PYRENE

ICSC: 0104

<p>I M P O R T A N T A D V I S I O N</p>	<p>PHYSICAL STATE; APPEARANCE: PALE-YELLOW CRYSTALS</p> <p>PHYSICAL DANGERS:</p> <p>CHEMICAL DANGERS: Reacts with strong oxidants causing fire and explosion hazard.</p> <p>OCCUPATIONAL EXPOSURE LIMITS: TLV: Exposure by all routes should be carefully controlled to levels as low as possible A2 (suspected human carcinogen); (ACGIH 2005). MAK: Carcinogen category: 2; Germ cell mutagen group: 2; (DFG 2005).</p>	<p>ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.</p> <p>INHALATION RISK: Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.</p> <p>EFFECTS OF SHORT-TERM EXPOSURE:</p> <p>EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: This substance is carcinogenic to humans. May cause heritable genetic damage to human germ cells. Animal tests show that this substance possibly causes toxicity to human reproduction or development.</p>
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<p>PHYSICAL PROPERTIES</p>	<p>Boiling point: 496°C Melting point: 178.1°C Density: 1.4 g/cm³</p>	<p>Solubility in water: none (<0.1 g/100 ml) Vapour pressure : negligible Octanol/water partition coefficient as log Pow: 6.04</p>
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<p>ENVIRONMENTAL DATA</p>	<p>The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish, in plants and in molluscs. The substance may cause long-term effects in the aquatic environment.</p>	
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NOTES

Do NOT take working clothes home. Benzo(a)pyrene is present as a component of polycyclic aromatic hydrocarbons (PAHs) in the environment, usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.

ADDITIONAL INFORMATION

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ICSC: 0104	(C) IPCS, CEC, 1994	BENZO(a)PYRENE
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<p>IMPORTANT LEGAL NOTICE:</p>	<p>Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.</p>
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International Chemical Safety Cards

BENZ(a)ANTHRACENE

ICSC: 0385



1,2-Benzoanthracene
Benzo(a)anthracene
2,3-Benzphenanthrene
Naphthanthracene
 $C_{18}H_{12}$
Molecular mass: 228.3

ICSC # 0385
CAS # 56-55-3
RTECS # [CV9275000](#)
EC # 601-033-00-9
October 23, 1995 Validated



TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.		Water spray, powder. In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		AVOID ALL CONTACT!	
• INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
• SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
• EYES		Safety goggles face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
• INGESTION		Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Personal protection: complete protective clothing including self-contained breathing apparatus.	Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0385

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ICSC: 0385

BENZ(a)ANTHRACENE

I M P O R T A N T D A T A	<p>PHYSICAL STATE; APPEARANCE: COLOURLESS TO YELLOW BROWN FLUORESCENT FLAKES OR POWDER.</p> <p>PHYSICAL DANGERS: Dust explosion possible if in powder or granular form, mixed with air.</p> <p>CHEMICAL DANGERS:</p> <p>OCCUPATIONAL EXPOSURE LIMITS: TLV: A2 (suspected human carcinogen); (ACGIH 2004). MAK: Carcinogen category: 2 (as pyrolysis product of organic materials) (DFG 2005).</p>	<p>ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation, through the skin and by ingestion.</p> <p>INHALATION RISK: Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.</p> <p>EFFECTS OF SHORT-TERM EXPOSURE:</p> <p>EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: This substance is probably carcinogenic to humans.</p>
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PHYSICAL PROPERTIES	Sublimation point: 435°C Melting point: 162°C Relative density (water = 1): 1.274 Solubility in water: none	Vapour pressure, Pa at 20°C: 292 Octanol/water partition coefficient as log Pow: 5.61
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ENVIRONMENTAL DATA	Bioaccumulation of this chemical may occur in seafood.	
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NOTES

This substance is one of many polycyclic aromatic hydrocarbons - standards are usually established for them as mixtures, e.g., coal tar pitch volatiles. However, it may be encountered as a laboratory chemical in its pure form. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken. Do NOT take working clothes home. Tetraphene is a common name. Card has been partly updated in October 2005 and August 2006: see sections Occupational Exposure Limits, EU classification.

ADDITIONAL INFORMATION

ICSC: 0385	BENZ(a)ANTHRACENE
(C) IPCS, CEC, 1994	

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International Chemical Safety Cards

DIELDRIN

ICSC: 0787



1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo-1,4-exo- 5,8-dimethanonaphthalene
3,4,5,6,9,9-Hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2alpha,3beta,6beta,6aalpha,7beta,7aalpha)-2,7,3,6-
dimethanonaphth(2,3-b)oxirene

HEOD



Molecular mass: 380.9

ICSC # 0787

CAS # 60-57-1

RTECS # [IO1750000](#)

UN # 2761

EC # 602-049-00-9

March 26, 1998 Validated



TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: all extinguishing agents allowed.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE! AVOID EXPOSURE OF ADOLESCENTS AND CHILDREN!	
•INHALATION	(See Ingestion).	Ventilation (not if powder).	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! See Ingestion.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Safety goggles, or face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Convulsions. Dizziness. Headache. Nausea. Vomiting. Muscle twitching.	Do not eat, drink, or smoke during work. Wash hands before eating.	Give a slurry of activated charcoal in water to drink. Do NOT induce vomiting. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Do NOT wash away into sewer. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. (Extra personal protection: chemical protection suit including self-contained breathing apparatus).	Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs and incompatible materials: See Chemical Dangers. Well closed. Keep in a well-ventilated room. Store in an area without drain or sewer access.	Do not transport with food and feedstuffs. Severe marine pollutant. T+ symbol N symbol R: 25-27-40-48/25-50/53 S: 1/2-22-36/37-45-60-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

International Chemical Safety Cards

DIELDRIN

ICSC: 0787

I M P O R T A N T D A T A	<p>PHYSICAL STATE; APPEARANCE: COLOURLESS CRYSTALS</p> <p>PHYSICAL DANGERS:</p> <p>CHEMICAL DANGERS: The substance decomposes on heating producing toxic fumes including hydrogen chloride. Reacts with oxidants and acids. Attacks metal due to the slow formation of hydrogen chloride in storage.</p> <p>OCCUPATIONAL EXPOSURE LIMITS: TLV (as TWA): 0.25 mg/m³, A4 (skin) (ACGIH 1997). MAK: (Inhalable fraction) 0.25 mg/m³ ; Peak limitation category: II(8) skin absorption (H); (DFG 2007). OSHA PEL: TWA 0.25 mg/m³ skin NIOSH REL: Ca TWA 0.25 mg/m³ skin See Appendix A NIOSH IDLH: Ca 50 mg/m³ See: 60571</p>	<p>ROUTES OF EXPOSURE: The substance can be absorbed into the body through the skin and by ingestion.</p> <p>INHALATION RISK: Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying.</p> <p>EFFECTS OF SHORT-TERM EXPOSURE: The substance may cause effects on the central nervous system, resulting in convulsions. Medical observation is indicated.</p> <p>EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: The substance accumulates in the human body. Cumulative effects are possible: see Acute Hazards/Symptoms.</p>
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PHYSICAL PROPERTIES	Melting point: 175-176°C Density: 1.7 g/cm ³ Solubility in water: none	Vapour pressure, Pa at 20°C: 0.0004 Octanol/water partition coefficient as log Pow: 6.2
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ENVIRONMENTAL DATA	The substance is very toxic to aquatic organisms. This substance may be hazardous to the environment; special attention should be given to honey bees, birds. In the food chain important to humans, bioaccumulation takes place, specifically in aquatic organisms. It is strongly advised not to let the chemical enter into the environment because it persists in the environment. The substance may cause long-term effects in the aquatic environment. Avoid release to the environment in circumstances different to normal use.	
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NOTES

Depending on the degree of exposure, periodic medical examination is indicated. If the substance is formulated with solvent(s) also consult the card(s) (ICSC) of the solvent(s). Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home. Alvit, Dieldrex, Dieldrite, Illoxol, Octalox, Panoram, and Quintox are trade names. Also consult ICSC #0774, Aldrin.

Transport Emergency Card: TEC (R)-61G41b.

Card has been partially updated in August 2007: see Storage, Occupational Exposure Limits.

ADDITIONAL INFORMATION

ICSC: 0787

DIELDRIN

(C) IPCS, CEC, 1994

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International Chemical Safety Cards

DDT

ICSC: 0034



Dichlorodiphenyltrichloroethane
 1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane
 2,2-bis(p-Chlorophenyl)-1,1,1-trichloroethane
 1,1'-(2,2,2-Trichloroethylidene)bis(4-chlorobenzene)
 p,p'-DDT
 $C_{14}H_9Cl_5$
 Molecular mass: 354.5



ICSC # 0034
 CAS # 50-29-3
 RTECS # [KJ3325000](#)
 UN # 2761
 EC # 602-045-00-7
 April 20, 2004 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION	Cough.	Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness.	Safety goggles, or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Tremors. Diarrhoea. Dizziness. Headache. Vomiting. Numbness. Paresthesias. Hyperexcitability. Convulsions.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give a slurry of activated charcoal in water to drink. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Do NOT let this chemical enter the environment. Sweep spilled substance into sealable non-metallic containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Personal protection: P3 filter respirator for toxic particles.	Provision to contain effluent from fire extinguishing. Separated from iron, aluminum and its salts, food and feedstuffs See Chemical Dangers.	Do not transport with food and feedstuffs. Severe marine pollutant. T symbol N symbol R: 25-40-48/25-50/53 S: 1/2-22-36/37-45-60-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0034

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ICSC: 0034

DDT

<p>I M P O R T A N T D A T A</p>	<p>PHYSICAL STATE; APPEARANCE: COLOURLESS CRYSTALS WHITE POWDER. TECHNICAL PRODUCT IS WAXY SOLID.</p> <p>PHYSICAL DANGERS:</p> <p>CHEMICAL DANGERS: On combustion, forms toxic and corrosive fumes including hydrogen chloride. Reacts with aluminium and iron.</p> <p>OCCUPATIONAL EXPOSURE LIMITS: TLV: 1 mg/m³ as TWA A3 (ACGIH 2004). MAK: 1 mg/m³ H Peak limitation category: II(8) (DFG 2003). OSHA PEL: TWA 1 mg/m³ skin NIOSH REL: Ca TWA 0.5 mg/m³ See Appendix A NIOSH IDLH: Ca 500 mg/m³ See: 50293</p>	<p>ROUTES OF EXPOSURE: The substance can be absorbed into the body by ingestion.</p> <p>INHALATION RISK: Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly especially if powdered.</p> <p>EFFECTS OF SHORT-TERM EXPOSURE: May cause mechanical irritation. The substance may cause effects on the central nervous system, resulting in convulsions and respiratory depression. Exposure at high levels may result in death. Medical observation is indicated.</p> <p>EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: The substance may have effects on the central nervous system and liver. This substance is possibly carcinogenic to humans. Animal tests show that this substance possibly causes toxicity to human reproduction or development.</p>
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<p>PHYSICAL PROPERTIES</p>	<p>Boiling point: 260°C Melting point: 109°C Density: 1.6 g/cm³</p>	<p>Solubility in water: poor Octanol/water partition coefficient as log Pow: 6.36</p>
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<p>ENVIRONMENTAL DATA</p>	<p>The substance is very toxic to aquatic organisms. This substance may be hazardous to the environment; special attention should be given to birds. Bioaccumulation of this chemical may occur along the food chain, for example in milk and aquatic organisms. This substance does enter the environment under normal use. Great care, however, should be given to avoid any additional release, e.g. through inappropriate disposal.</p>	
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NOTES

Depending on the degree of exposure, periodic medical examination is indicated. Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home. Consult national legislation. Agritan, Azotox, Anofex, Ixodex, Gesapon, Gesarex, Gesarol, Guesapon, Clofenotane, Zeidane, Dicophane, Neocid are trade names.

Transport Emergency Card: TEC (R)-61GT7-III

ADDITIONAL INFORMATION

ICSC: 0034

DDT

(C) IPCS, CEC, 1994

<p>IMPORTANT LEGAL NOTICE:</p>	<p>Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.</p>
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[MSDS Sheets](#) [Data MSDS](#) [MSDS Search](#) [MSDS Chemical](#)



MSDS 250,000+

MSDS : 2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene, 99%
 CAS : 72-55-9
 SYNONYMS : p,p'-DDE ; ethylene,1,1-dichloro-2,2-bis-(p-chlorophenyl)- ; DDT dehydrochloride ; DDE; 1-1'-(Dichloroethenylidene)bis(4-chlorobenzene)

[MSDS Safety Sheet](#)

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 [2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene, 99% 72-55-9]

Suppliers:

Not Available

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Not Available

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**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
72-55-9	2,2-Bis-(4-chlorophenyl)-1,1-dichloroethy	99	200-784-6
	ethylene		

Hazard Symbols: XN

Risk Phrases: 22 33

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Harmful if swallowed. Danger of cumulative effects. Cancer suspect agent. Possible risks of irreversible effects.

Potential Health Effects

Eye:
 May cause eye irritation.

Skin:
 May cause skin irritation.

Ingestion:
 May cause irritation of the digestive tract. May be harmful if swallowed. Ingestion of large amounts may cause liver and/or kidney damage.

Inhalation:
 May cause respiratory tract irritation.

Chronic:
 May cause cancer according to animal studies. Adverse reproductive effects have been reported in animals. Laboratory experiments have resulted in mutagenic effects.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin:
 Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion:
 If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation:
 Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:
 Treat symptomatically and supportively.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Will burn if involved in a fire.

Extinguishing Media:

For large fires, use water spray, fog or regular foam. For small fires, use dry chemical, carbon dioxide, water spray or regular foam. Cool containers with flooding quantities of water until well after fire is out.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Do not ingest or inhale. Use with adequate ventilation.

Storage:

Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

CAS# 72-55-9:

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Crystals

Color: white

Odor: None reported.

pH: Not available.

Vapor Pressure: 6.5106 mm Hg @ 20 C

Viscosity: Not available.

Boiling Point: 336 deg C

Freezing/Melting Point: 88.00 - 90.00 deg C

Autoignition Temperature: Not available.

Flash Point: Not available.

Explosion Limits, lower: Not available.

Explosion Limits, upper: Not available.

Decomposition Temperature:

Solubility in water: 0.010 ppm

Specific Gravity/Density:

Molecular Formula: C14H8Cl4

Molecular Weight: 318.02

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Incompatible materials, dust generation, strong oxidants.

Incompatibilities with Other Materials:

Strong oxidizing agents - strong bases.

Hazardous Decomposition Products:

Hydrogen chloride, carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:

CAS# 72-55-9: KV9450000

LD50/LC50:

CAS# 72-55-9: Oral, mouse: LD50 = 700 mg/kg; Oral, rat: LD50 = 880 mg/kg.

Carcinogenicity:

2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene -

California: carcinogen, initial date 1/1/89

Other:

See actual entry in RTECS for complete information.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:

Estimated BCF value = 8,300 based on water solubility. Estimated Koc value = 8,300. There was no movement of DDE reported in soil column mobility experiments.

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of in a manner consistent with federal, state, and local regulations.

**** SECTION 14 - TRANSPORT INFORMATION ****

IATA

Not regulated as a hazardous material.

IMO

Not regulated as a hazardous material.

RID/ADR

Not regulated as a hazardous material.

USA RQ: CAS# 72-55-9: 1 lb final RQ; 0.454 kg final RQ

**** SECTION 15 - REGULATORY INFORMATION ****

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:

R 22 Harmful if swallowed.

R 33 Danger of cumulative effects.

Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 72-55-9: 3

Canada

None of the chemicals in this product are listed on the DSL/NDSL list.

CAS# 72-55-9 is listed on Canada's Ingredient Disclosure List.

US FEDERAL

TSCA

CAS# 72-55-9 is not listed on the TSCA inventory.

It is for research and development use only.

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 9/28/1998 Revision #3 Date: 3/18/2003

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

72-55-9 msds

GO

ALL MSDS PAGES IN THIS GROUP

NAME	CAS
M-Benzoyloxybenzyl Alcohol, 97%	1700-30-7
Octaphenylcyclotetrasiloxane, 98%	546-56-5
Cetylpyridinium chloride	123-03-5
3,4-Difluorophenol, 99%	2713-33-9
1-Benzyl-4-Hydroxypiperidine, 97%	4727-72-4
4-tert-Butylbenzoyl chloride	1710-98-1
Borane-morpholine complex, 97%	4856-95-5
Benzyl Ether, 99%	103-50-4
5-Amino-1-Naphthol (Pract)	83-55-6
Pyridinium-P-Toluenesulfonate 98%	24057-28-1
Pyrogallol Red, 98% (Titr.)	32638-88-3
Amberlite ira 416	9002-26-0
3-Methoxybenzotrile, 98%	1527-89-5
1-Adamantanemethanol, 99%	770-71-8
Inosine, 99%	58-63-9
Pentafluoropropionic Acid	422-64-0
Pyruvic Acid	127-17-3
Potassium hydrogen fluoride, 99+%	7789-29-9
Aluminum Nitride, 98% Particle Size <10 Micron	24304-00-5
Nickel(II) hydroxide, c.p., 60-61% Ni	12054-48-7
1-Adamantanamine sulfate, 99%	31377-23-8
S-(Thiobenzoyl)-Thioglycolic Acid, 97%	942-91-6
N,N-Dimethyl-P-Nitroaniline	100-23-2
Benzofuroxan	480-96-6
cis-2-Aminomethyl-1-cyclohexanol hydrochloride, 99%	24947-68-0
Silver Phosphate, 98% (Titr.)	7784-09-0

4-Cyano-4-Phenylpiperidine Hydrochloride, 99% (TLC)	51304-58-6
Methanesulfonamide	3144-09-0
gamma-Octanoic lactone, 98%	104-50-7
Cis,cis,cis-1,2,3,4-cyclopentane- tetracarboxylic dianhydride,	4802-47-5
Tetrachloroethylene Carbonate, 98+%	22432-68-4
Oxamic Acid, 98%	471-47-6
1O,11-Dihydro-5H-Dibenzo(A,D)-Cycloheptene, 98%	833-48-7
Thallium (I) Sulfate, 99.9+%	7446-18-6
N-(2,6-Dimethylphenylcarbonyl-Methyl)-Iminodiacetic Acid, 99%	59160-29-1
P-(Dimethylamino)cinnamic Acid, 99%	1552-96-1
Biebrich Scarlet, 99% (UV-VIS)	4196-99-0
4-Chlorobenzenediazonium hexafluoro- phosphate	1582-27-0
Ammonium hexachloroiridate(IV), 99.99%	16940-92-4
Methylamine-d2 deuteriochloride, 98+ atom % D	593-51-1
2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene, 99%	72-55-9
Nitro red	56431-61-9
Methyl 2,3-dichlorobenzoate, 98+%	2905-54-6
Isopropyl Bromoacetate, 98% (GC)	29921-57-1
1-Iodo-4-Nitrobenzene, 99%	636-98-6
4-Ethylcyclohexanol, 99% cis/trans mixture	4534-74-1
Fluorescamine	38183-12-9
Tris(2,2,6,6-Tetramethyl-3,5-Heptanedionato)Dysprosium(III), 99+%	15522-69-7
3-Amino-2,2,5,5-Tetramethyl-1-Pyrrolidinyloxy, 99% (Titr.)	34272-83-8
3,4-Dihydroxyphenylacetic Acid,98%	102-32-9

Free MSDS Search (Providing 250,000+ Material Properties)
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Last modified: 11/29/2011 16:11:11

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 4,4'-DDD PESTANAL,250 MG (2,2-BIS(4-CHL&

Product Number : 35486
 Brand : Fluka

Company : Sigma-Aldrich
 3050 Spruce Street
 SAINT LOUIS MO 63103
 USA

Telephone : +1 800-325-5832
 Fax : +1 800-325-5052
 Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Toxic by ingestion, Harmful by skin absorption., Possible carcinogen.

GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)

H301 Toxic if swallowed.
 H312 Harmful in contact with skin.
 H351 Suspected of causing cancer.
 H400 Very toxic to aquatic life.
 H413 May cause long lasting harmful effects to aquatic life.

Precautionary statement(s)

P273 Avoid release to the environment.
 P280 Wear protective gloves/protective clothing.
 P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

HMIS Classification

Health hazard: 2
 Chronic Health Hazard: *
 Flammability: 0
 Physical hazards: 0

NFPA Rating

Health hazard: 2
 Fire: 0
 Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Skin Harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.
Ingestion Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 1,1-Dichloro-2,2-bis(4-chlorophenyl)ethane
4,4'-DDD
TDE

Formula : C₁₄H₁₀Cl₄
Molecular Weight : 320.04 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane			
72-54-8	200-783-0	-	-

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Face shield and safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form solid

Safety data

pH	no data available
Melting point	94.0 - 96.0 °C (201.2 - 204.8 °F)
Boiling point	193.0 °C (379.4 °F) at 1.3 hPa (1.0 mmHg)
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	< 0.00001 hPa (< 0.00001 mmHg) at 25.0 °C (77.0 °F)
Density	1.38 g/cm ³
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 6.02

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Conditions to avoid

no data available

Materials to avoid

Strong oxidizing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - Hamster - > 5,000 mg/kg

TDLo Oral - Human - 428.5 mg/kg

Remarks: Endocrine:Adrenal cortex hypoplasia.

TDLo Oral - rat - 6,000 mg/kg

Remarks: Cardiac:Other changes. Gastrointestinal:Other changes. Kidney, Ureter, Bladder:Changes in both tubules and glomeruli.

TDLo Oral - rat - 14 mg/kg

Remarks: Liver:Changes in liver weight. Endocrine:Estrogenic. Musculoskeletal:Other changes.

TDLo Oral - rat - 2,100 mg/kg

Remarks: Behavioral:Altered sleep time (including change in righting reflex).

LD50 Dermal - rabbit - 1,200 mg/kg

Remarks: Behavioral:Excitement. Behavioral:Convulsions or effect on seizure threshold. Skin irritation

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure (GHS)

no data available

Specific target organ toxicity - repeated exposure (GHS)

no data available

Aspiration hazard

no data available

Potential health effects**Inhalation**

May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion

Toxic if swallowed.

Skin

Harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information

RTECS: KI0700000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - other fish - 1.18 - 9 mg/l - 96.0 h LC50 - Lepomis macrochirus (Bluegill) - 0.04 - 0.05 mg/l - 96.0 h LC50 - Oncorhynchus mykiss (rainbow trout) - 0.06 - 0.09 mg/l - 96.0 h LC50 - Pimephales promelas (fathead minnow) - 3.47 - 5.58 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia pulex (Water flea) - 0.01 mg/l - 48 h

Persistence and degradability

no data available

Bioaccumulative potential

Indication of bioaccumulation.

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Product

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN-Number: 2811 Class: 6.1 Packing group: III
Proper shipping name: Toxic solids, organic, n.o.s. (2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane)
Reportable Quantity (RQ): 1 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

UN-Number: 2811 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane)
Marine pollutant: No

IATA

UN-Number: 2811 Class: 6.1 Packing group: III
Proper shipping name: Toxic solid, organic, n.o.s. (2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane)

15. REGULATORY INFORMATION

OSHA Hazards

Toxic by ingestion, Harmful by skin absorption., Possible carcinogen.

DSL Status

This product contains the following components that are not on the Canadian DSL nor NDSL lists.

2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	CAS-No. 72-54-8
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SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard

Massachusetts Right To Know Components

2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	CAS-No. 72-54-8	Revision Date
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Pennsylvania Right To Know Components

2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	CAS-No. 72-54-8	Revision Date
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New Jersey Right To Know Components

2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	CAS-No. 72-54-8	Revision Date
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California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. 2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	CAS-No. 72-54-8	Revision Date
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16. OTHER INFORMATION

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

ZINC POWDER

ICSC: 1205



Blue powder
Merrillite
Zn
Atomic mass: 65.4
(powder)

ICSC # 1205
CAS # 7440-66-6
RTECS # [ZG8600000](#)
UN # 1436 (zinc powder or dust)
EC # 030-001-00-1
October 24, 1994 Peer reviewed



TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable. Many reactions may cause fire or explosion. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking. NO contact with acid(s), base (s) and incompatible substances (see Chemical Dangers).	Special powder, dry sand, NO other agents. NO water.
EXPLOSION	Risk of fire and explosion on contact with acid(s), base(s), water and incompatible substances.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding). Prevent deposition of dust.	In case of fire: cool drums, etc., by spraying with water but avoid contact of the substance with water.
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE!	
•INHALATION	Metallic taste and metal fume fever. Symptoms may be delayed (see Notes).	Local exhaust.	Fresh air, rest. Refer for medical attention.
•SKIN	Dry skin.	Protective gloves.	Rinse and then wash skin with water and soap.
•EYES		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Nausea. Vomiting.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Extinguish or remove all ignition sources. Do NOT wash away into sewer. Sweep spilled substance into containers. then remove to safe place. Personal protection: self-contained breathing apparatus.	Fireproof. Separated from acids, bases oxidants Dry.	Airtight. F symbol N symbol R: 15-17-50/53 S: 2-7/8-43-46-60-61 UN Hazard Class: 4.3 UN Subsidiary Risks: 4.2

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1205

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

ZINC POWDER

ICSC: 1205

<p>I M P O R T A N T D A T A</p>	<p>PHYSICAL STATE; APPEARANCE: ODOURLESS GREY TO BLUE POWDER.</p> <p>PHYSICAL DANGERS: Dust explosion possible if in powder or granular form, mixed with air. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.</p> <p>CHEMICAL DANGERS: Upon heating, toxic fumes are formed. The substance is a strong reducing agent and reacts violently with oxidants. Reacts with water and reacts violently with acids and bases forming flammable/explosive gas (hydrogen - see ICSC0001) Reacts violently with sulfur, halogenated hydrocarbons and many other substances causing fire and explosion hazard.</p> <p>OCCUPATIONAL EXPOSURE LIMITS: TLV not established.</p>	<p>ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation and by ingestion.</p> <p>INHALATION RISK: Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.</p> <p>EFFECTS OF SHORT-TERM EXPOSURE: Inhalation of fumes may cause metal fume fever. The effects may be delayed.</p> <p>EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: Repeated or prolonged contact with skin may cause dermatitis.</p>
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<p>PHYSICAL PROPERTIES</p>	<p>Boiling point: 907°C Melting point: 419°C Relative density (water = 1): 7.14</p>	<p>Solubility in water: reaction Vapour pressure, kPa at 487°C: 0.1 Auto-ignition temperature: 460°C</p>
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<p>ENVIRONMENTAL DATA</p>	
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NOTES

Zinc may contain trace amounts of arsenic, when forming hydrogen, may also form toxic gas arsine (see ICSC 0001 and ICSC 0222). Reacts violently with fire extinguishing agents such as water, halons, foam and carbon dioxide. The symptoms of metal fume fever do not become manifest until several hours later. Rinse contaminated clothes (fire hazard) with plenty of water.

Transport Emergency Card: TEC (R)-43GWS-II+III
NFPA Code: H0; F1; R1;

ADDITIONAL INFORMATION

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ICSC: 1205

ZINC POWDER

(C) IPCS, CEC, 1994

<p>IMPORTANT LEGAL NOTICE:</p>	<p>Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.</p>
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International Chemical Safety Cards

MERCURY

ICSC: 0056



Quicksilver
Liquid silver
Hg
Atomic mass: 200.6

ICSC # 0056
CAS # 7439-97-6
RTECS # [OV4550000](#)
UN # 2809
EC # 080-001-00-0
April 22, 2004 Peer reviewed



TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Risk of fire and explosion.		In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN! AVOID EXPOSURE OF ADOLESCENTS AND CHILDREN!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Abdominal pain. Cough. Diarrhoea. Shortness of breath. Vomiting. Fever or elevated body temperature.	Local exhaust or breathing protection.	Fresh air, rest. Artificial respiration if indicated. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work. Wash hands before eating.	Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area in case of a large spill! Consult an expert! Ventilation. Collect leaking and spilled liquid in sealable non-metallic containers as far as possible. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Chemical protection suit including self-contained breathing apparatus.	Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs Well closed.	Special material. Do not transport with food and feedstuffs. T symbol N symbol R: 23-33-50/53 S: 1/2-7-45-60-61 UN Hazard Class: 8 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0056

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

MERCURY

ICSC: 0056

<p>I M P O R T A N T D A T A</p>	<p>PHYSICAL STATE; APPEARANCE: ODOURLESS, HEAVY AND MOBILE SILVERY LIQUID METAL.</p> <p>PHYSICAL DANGERS:</p> <p>CHEMICAL DANGERS: Upon heating, toxic fumes are formed. Reacts violently with ammonia and halogens causing fire and explosion hazard. Attacks aluminium and many other metals forming amalgams.</p> <p>OCCUPATIONAL EXPOSURE LIMITS: TLV: 0.025 mg/m³ as TWA (skin) A4 BEI issued (ACGIH 2004). MAK: 0.1 mg/m³ Sh Peak limitation category: II(8) Carcinogen category: 3B (DFG 2003). OSHA PEL_f: C 0.1 mg/m³ NIOSH REL: Hg Vapor: TWA 0.05 mg/m³ skin Other: C 0.1 mg/m³ skin NIOSH IDLH: 10 mg/m³ (as Hg) See: 7439976</p>	<p>ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation of its vapour and through the skin, also as a vapour!</p> <p>INHALATION RISK: A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.</p> <p>EFFECTS OF SHORT-TERM EXPOSURE: The substance is irritating to the skin. Inhalation of the vapours may cause pneumonitis. The substance may cause effects on the central nervous system and kidneys. The effects may be delayed. Medical observation is indicated.</p> <p>EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: The substance may have effects on the central nervous system kidneys, resulting in irritability, emotional instability, tremor, mental and memory disturbances, speech disorders. Danger of cumulative effects. Animal tests show that this substance possibly causes toxic effects upon human reproduction.</p>
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<p>PHYSICAL PROPERTIES</p>	<p>Boiling point: 357°C Melting point: -39°C Relative density (water = 1): 13.5 Solubility in water: none</p>	<p>Vapour pressure, Pa at 20°C: 0.26 Relative vapour density (air = 1): 6.93 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.009</p>
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<p>ENVIRONMENTAL DATA</p>	<p>The substance is very toxic to aquatic organisms. In the food chain important to humans, bioaccumulation takes place, specifically in fish.</p>	
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NOTES

Depending on the degree of exposure, periodic medical examination is indicated. No odour warning if toxic concentrations are present. Do NOT take working clothes home.

Transport Emergency Card: TEC (R)-80GC9-II+III

ADDITIONAL INFORMATION

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ICSC: 0056	(C) IPCS, CEC, 1994	MERCURY
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<p>IMPORTANT LEGAL NOTICE:</p>	<p>Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.</p>
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International Chemical Safety Cards

LEAD

ICSC: 0052



Lead metal
Plumbum
Pb
Atomic mass: 207.2
(powder)

ICSC # 0052
CAS # 7439-92-1
RTECS # [OF7525000](#)
October 08, 2002 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	PREVENT DISPERSION OF DUST! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Nausea. Vomiting.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment. Personal protection: P3 filter respirator for toxic particles.	Separated from food and feedstuffs incompatible materials See Chemical Dangers.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0052

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

<p>I M P O R T A N T T A D A</p>	<p>PHYSICAL STATE; APPEARANCE: BLUISH-WHITE OR SILVERY-GREY SOLID IN VARIOUS FORMS. TURNS TARNISHED ON EXPOSURE TO AIR.</p> <p>PHYSICAL DANGERS: Dust explosion possible if in powder or granular form, mixed with air.</p> <p>CHEMICAL DANGERS: On heating, toxic fumes are formed. Reacts with oxidants. Reacts with hot concentrated nitric acid, boiling concentrated hydrochloric acid and sulfuric acid. Attacked by pure water and by weak organic acids in the presence of oxygen.</p> <p>OCCUPATIONAL EXPOSURE LIMITS: TLV: 0.05 mg/m³ A3 (confirmed animal carcinogen with unknown relevance to humans); BEI issued (ACGIH 2004). MAK: Carcinogen category: 3B; Germ cell mutagen group: 3A; (DFG 2004). EU OEL: as TWA 0.15 mg/m³ (EU 2002). OSHA PEL*: 1910.1025 TWA 0.050 mg/m³ See Appendix C *Note: The PEL also applies to other lead compounds (as Pb) -- see Appendix C. NIOSH REL*: TWA 0.050 mg/m³ See Appendix C *Note: The REL also applies to other lead compounds (as Pb) -- see Appendix C. NIOSH IDLH: 100 mg/m³ (as Pb) See: 7439921</p>	<p>ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation and by ingestion.</p> <p>INHALATION RISK: A harmful concentration of airborne particles can be reached quickly when dispersed, especially if powdered.</p> <p>EFFECTS OF SHORT-TERM EXPOSURE:</p> <p>EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: The substance may have effects on the blood bone marrow central nervous system peripheral nervous system kidneys , resulting in anaemia, encephalopathy (e.g., convulsions), peripheral nerve disease, abdominal cramps and kidney impairment. Causes toxicity to human reproduction or development.</p>
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PHYSICAL PROPERTIES	<p>Boiling point: 1740°C Melting point: 327.5°C</p>	<p>Density: 11.34 g/cm³ Solubility in water: none</p>
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ENVIRONMENTAL DATA	<p>Bioaccumulation of this chemical may occur in plants and in mammals. It is strongly advised that this substance does not enter the environment.</p>	
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NOTES

Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home.
Transport Emergency Card: TEC (R)-51S1872

ADDITIONAL INFORMATION

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ICSC: 0052	LEAD
(C) IPCS, CEC, 1994	

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International Chemical Safety Cards

COPPER

ICSC: 0240



Cu
(powder)

ICSC # 0240

CAS # 7440-50-8

RTECS # [GL5325000](#)

September 24, 1993 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Special powder, dry sand, NO other agents.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
• INHALATION	Cough. Headache. Shortness of breath. Sore throat.	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
• SKIN	Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
• EYES	Redness. Pain.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
• INGESTION	Abdominal pain. Nausea. Vomiting.	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers. Carefully collect remainder. Then remove to safe place. (Extra personal protection: P2 filter respirator for harmful particles).	Separated from - See Chemical Dangers.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0240

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

COPPER

ICSC: 0240

<p>I</p> <p>M</p> <p>P</p>	<p>PHYSICAL STATE; APPEARANCE: RED POWDER, TURNS GREEN ON EXPOSURE TO MOIST AIR.</p> <p>PHYSICAL DANGERS:</p> <p>CHEMICAL DANGERS:</p>	<p>ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation and by ingestion.</p> <p>INHALATION RISK: Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.</p>
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Shock-sensitive compounds are formed with acetylenic compounds, ethylene oxides and azides. Reacts with strong oxidants like chlorates, bromates and iodates, causing explosion hazard.

EFFECTS OF SHORT-TERM EXPOSURE:
Inhalation of fumes may cause metal fume fever. See Notes.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.2 mg/m³ fume (ACGIH 1992-1993).
TLV (as Cu, dusts & mists): 1 mg/m³ (ACGIH 1992-1993).
Intended change 0.1 mg/m³
Inhal.,
A4 (not classifiable as a human carcinogen);
MAK: 0.1 mg/m³ (Inhalable fraction)
Peak limitation category: II(2) Pregnancy risk group: D (DFG 2005).
OSHA PEL*: TWA 1 mg/m³ *Note: The PEL also applies to other copper compounds (as Cu) except copper fume.
NIOSH REL*: TWA 1 mg/m³ *Note: The REL also applies to other copper compounds (as Cu) except Copper fume.
NIOSH IDLH: 100 mg/m³ (as Cu) See: [7440508](#)

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact may cause skin sensitization.

PHYSICAL PROPERTIES	Boiling point: 2595°C Melting point: 1083°C Relative density (water = 1): 8.9	Solubility in water: none
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ENVIRONMENTAL DATA	
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NOTES

The symptoms of metal fume fever do not become manifest until several hours.

ADDITIONAL INFORMATION

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ICSC: 0240

COPPER

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International Chemical Safety Cards

CHROMIUM

ICSC: 0029



Chrome
Cr
Atomic mass: 52.0
(powder)

ICSC # 0029
CAS # 7440-47-3
RTECS # [GB4200000](#)
October 27, 2004 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible under specific conditions.	No open flames if in powder form.	In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION		Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST!	
• INHALATION	Cough.	Local exhaust or breathing protection.	Fresh air, rest.
• SKIN		Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
• EYES	Redness.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
• INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Personal protection: P2 filter respirator for harmful particles.		R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0029

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

CHROMIUM

ICSC: 0029

I	PHYSICAL STATE; APPEARANCE: GREY POWDER	ROUTES OF EXPOSURE:
M	PHYSICAL DANGERS: Dust explosion possible if in powder or granular form, mixed with air.	INHALATION RISK: A harmful concentration of airborne particles can be reached quickly when dispersed.
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CHEMICAL DANGERS:

Chromium is a catalytic substance and may cause reaction in contact with many organic and inorganic substances , causing fire and explosion hazard.

EFFECTS OF SHORT-TERM EXPOSURE:

May cause mechanical irritation to the eyes and the respiratory tract.

OCCUPATIONAL EXPOSURE LIMITS:

TLV: (as Cr metal, Cr(III) compounds) 0.5 mg/m³ as TWA A4 (ACGIH 2004).
MAK not established.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

OSHA PEL*: TWA 1 mg/m³ [See Appendix C](#) *Note: The PEL also applies to insoluble chromium salts.

NIOSH REL: TWA 0.5 mg/m³ [See Appendix C](#)

NIOSH IDLH: 250 mg/m³ (as Cr) See: [7440473](#)

PHYSICAL PROPERTIES

Boiling point: 2642°C
Melting point: 1900°C
Density: 7.15 g/cm³

Solubility in water:
none

ENVIRONMENTAL DATA

NOTES

The surface of the chromium particles is oxidized to chromium(III)oxide in air. See ICSC 1531 Chromium(III) oxide.

ADDITIONAL INFORMATION

ICSC: 0029

CHROMIUM

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International Chemical Safety Cards

BARIUM SULFATE

ICSC: 0827



Barium sulphate
Blanc fixe
Artificial barite
BaSO₄

Molecular mass: 233.43

ICSC # 0827

CAS # 7727-43-7

RTECS # [CR0600000](#)

October 20, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
• INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
• SKIN		Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
• EYES		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
• INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Personal protection: P1 filter respirator for inert particles.		R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0827

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BARIUM SULFATE

ICSC: 0827

<p>I M P O R T A N T D A T A</p>	<p>PHYSICAL STATE; APPEARANCE: ODOURLESS TASTELESS, WHITE OR YELLOWISH CRYSTALS OR POWDER.</p> <p>PHYSICAL DANGERS:</p> <p>CHEMICAL DANGERS: Reacts violently with aluminium powder.</p> <p>OCCUPATIONAL EXPOSURE LIMITS: TLV: 10 mg/m³ as TWA; (ACGIH 2004). MAK: (Inhalable fraction) 4 mg/m³; (Respirable fraction) 1.5 mg/m³; (DFG 2004). OSHA PEL[†]: TWA 15 mg/m³ (total) TWA 5 mg/m³ (resp) NIOSH REL: TWA 10 mg/m³ (total) TWA 5 mg/m³ (resp) NIOSH IDLH: N.D. See: IDLH INDEX</p>	<p>ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation of its aerosol.</p> <p>INHALATION RISK: Evaporation at 20°C is negligible; a nuisance-causing concentration of airborne particles can, however, be reached quickly.</p> <p>EFFECTS OF SHORT-TERM EXPOSURE:</p> <p>EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: Lungs may be affected by repeated or prolonged exposure to dust particles, resulting in baritosis (a form of benign pneumoconiosis).</p>
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PHYSICAL PROPERTIES	<p>Melting point (decomposes): 1600°C Density: 4.5 g/cm³</p>	Solubility in water: none
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ENVIRONMENTAL DATA	
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NOTES

Occurs in nature as the mineral barite; also as barytes, heavy spar. Card has been partly updated in October 2005. See section Occupational Exposure Limits.

ADDITIONAL INFORMATION

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ICSC: 0827	BARIUM SULFATE
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APPENDIX D
HOSPITAL INFORMATION AND MAP
FIELD ACCIDENT REPORT

FIELD ACCIDENT REPORT

This report is to be filled out by the designated Site Safety Officer after EVERY accident.

PROJECT NAME _____ PROJECT. NO. _____

Date of Accident _____ Time _____ Report By _____

Type of Accident (Check One):

Vehicular Personal Property

Name of Injured _____ DOB or Age _____

How Long Employed _____

Names of Witnesses _____

Description of Accident _____

Action Taken _____

Did the Injured Lose Any Time? _____ How Much (Days/Hrs.)? _____

Was Safety Equipment in Use at the Time of the Accident (Hard Hat, Safety Glasses, Gloves, Safety Shoes, etc.)? _____

(If not, it is the EMPLOYEE'S sole responsibility to process his/her claim through his/her Health and Welfare Fund.)

INDICATE STREET NAMES, DESCRIPTION OF VEHICLES, AND NORTH ARROW

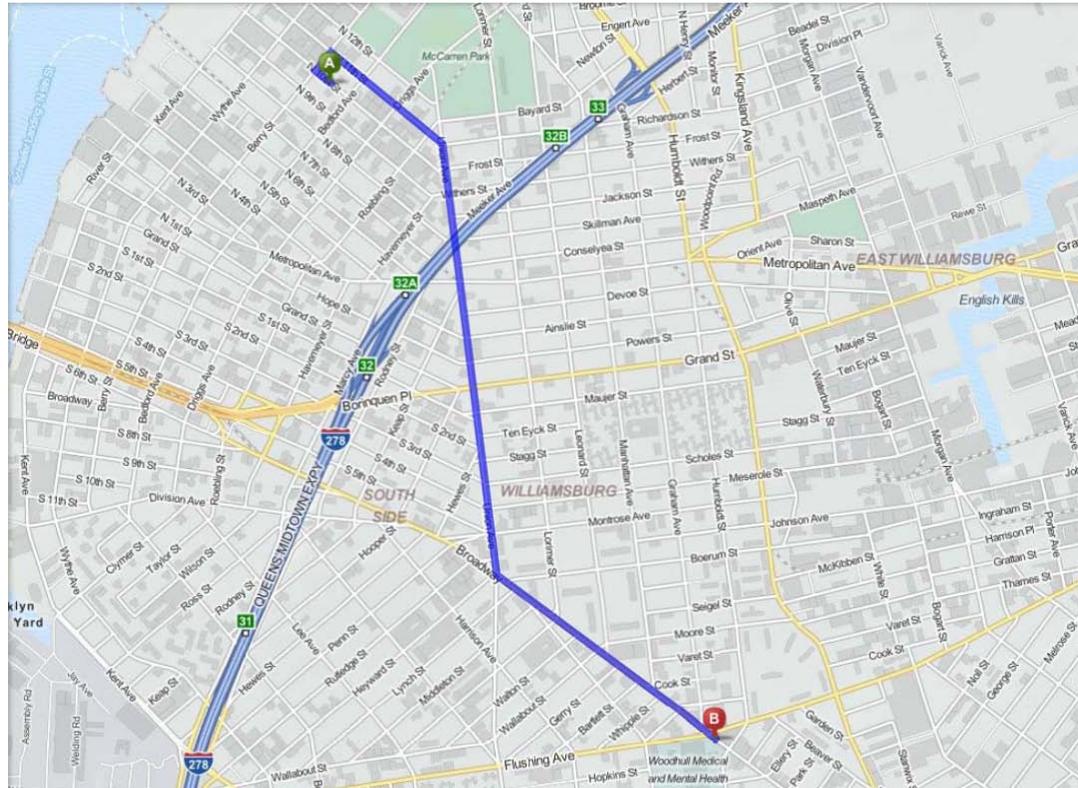
HOSPITAL INFORMATION AND MAP

The hospital nearest the site is:

760 Broadway, Brooklyn, New York 11206

(718) 963-8000

1.82 Miles – About 8 Minutes



- 1. Start out going **northwest on N 10th St** toward Berry St. 0.04 mi
- ➔ 2. Take the **1st right onto Berry St.** 0.05 mi
If you reach Wythe Ave you've gone a little too far
- ➔ 3. Take the **1st right onto N 11th St.** 0.3 mi
*The Counting Room is on the corner
 If you reach N 12th St you've gone a little too far*
- ↗ 4. Turn **slight right onto Union Ave.** 0.9 mi
*Union Ave is just past Roebling St
 Richlane is on the right*
- ↖ 5. Turn **slight left onto Broadway.** 0.5 mi
*Broadway is just past Johnson Ave
 Nelly's Flower Shop is on the corner
 If you are on Union Ave and reach Lynch St
 you've gone a little too far*
- ➔ 6. Turn **right onto Flushing Ave.** 0.10 mi
*Flushing Ave is just past Graham Ave
 Walgreens is on the corner
 If you reach Marcus Garvey Blvd you've gone a
 little too far*
- 7. **720 FLUSHING AVE** is on the left. far
*If you reach Throop Ave you've gone a little too
 far*